

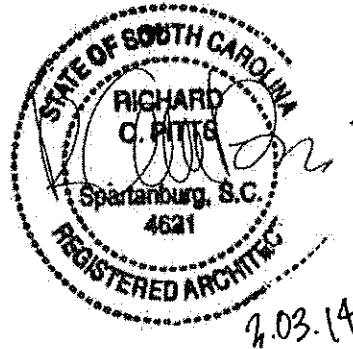
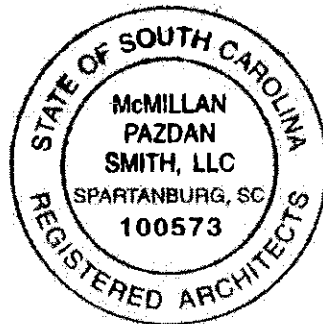
PROJECT MANUAL

For The

H&SS ELEVATOR REPLACEMENT

For

University of South Carolina Aiken
Aiken, South Carolina



McMillan Pazdan Smith, LLC
Spartanburg, South Carolina
March 2014

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PROJECT NUMBER: H29-9547

PROJECT NAME: USC Aiken H&SS Bldg Elevator Replacement

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Not Used

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Not Used

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Not Used

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Not Used

SE-310
REQUEST FOR ADVERTISEMENT

2011 Edition
Rev. 7/28/2014

PROJECT NAME: USC Aiken H&SS Bldg Elevator Replacement

PROJECT NUMBER: H29-9547

PROJECT LOCATION: Aiken, SC

Contractor may be subject to performance appraisal at close of project

BID SECURITY REQUIRED? Yes No

PERFORMANCE & PAYMENT BONDS REQUIRED? Yes No

CONSTRUCTION COST RANGE: <\$125,000

DESCRIPTION OF PROJECT: Modernize existing elevators and augment associated MEP systems. Work to include fire stopping, fire dampers, upgrades to HVAC system and associated electrical/controls, fire alarm system work, door upgrades, and general construction. Scope of work above will apply for one elevator in the Humanities and Social Services (H&SS) Building. Minority and small business participation is encouraged.

A/E NAME: McMillan Pazdan Smith Architecture, LLC

A/E CONTACT: Sal Napolitano

A/E ADDRESS: Street/PO Box: 127 Dunbar Street

City: Spartanburg

State: SC ZIP: 29306-

EMAIL: snapolitano@mcmillanpazdansmith.com

TELEPHONE: 864-585-5678

FAX: 864-542-9451

All questions & correspondence concerning this Invitation shall be addressed to the A/E.

BIDDING DOCUMENTS/PLANS MAY BE OBTAINED FROM: https://purchasing.sc.edu (see Facilities Construction Solicitations & Awards).

PLAN DEPOSIT AMOUNT: \$0.00 **IS DEPOSIT REFUNDABLE:** Yes No

Only those Bidding Documents/Plans obtained from the above listed source(s) are official. Bidders rely on copies of Bidding Documents/Plans obtained from any other source at their own risk.

BIDDING DOCUMENTS/PLANS ARE ALSO ON FILE FOR VIEWING PURPOSES ONLY AT *(list name and location for each plan room or other entity):*

Bidders are responsible for obtaining all updates to bidding documents from the USC Purchasing website.
(<http://purchasing.sc.edu>)

PRE-BID CONFERENCE? Yes No **MANDATORY ATTENDANCE?** Yes No

DATE: 11/12/2014 **TIME:** 10:00 AM **PLACE:** USCA - Supply & Maint Bldg 908, 471 University Pkwy, Aiken, SC

AGENCY: University of South Carolina

NAME OF AGENCY PROCUREMENT OFFICER: Clarissa Clark

ADDRESS: Street/PO Box: 743 Greene Street

City: Columbia

State: SC ZIP: 29208-

EMAIL: CLARKCG2@mailbox.sc.edu

TELEPHONE: 803-777-7162

FAX: 803-777-7334

BID CLOSING DATE: 11/25/2014 **TIME:** 2:00 PM **LOCATION:** 743 Greene Street, Columbia, SC 29208

BID DELIVERY ADDRESSES:

HAND-DELIVERY:

Attn: Clarissa Clark

743 Greene Street

Columbia, SC 29208

MAIL SERVICE:

Attn: Clarissa Clark

743 Greene Street

Columbia, SC 29208

IS PROJECT WITHIN AGENCY CONSTRUCTION CERTIFICATION? (Agency MUST check one) Yes No

APPROVED BY *(Office of State Engineer):* _____ **DATE:** _____

AIA Document A701
Instructions to Bidders

Original AIA Document on file at:
Office of Facilities, Planning, and Construction
743 Greene Street
Columbia, SC 29208

OSE FORM 00201**STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS****OWNER:** University of South Carolina**PROJECT NUMBER:** H29-9547**PROJECT NAME:** USC Aiken H&SS Bldg Elevator Replacement**PROJECT LOCATION:** University of South Carolina Aiken**PROCUREMENT OFFICER:** Clarissa Clark**1. STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS**

1.1. These Standard Supplemental Instructions To Bidders amend or supplement Instructions To Bidders (AIA Document A701-1997) and other provisions of Bidding and Contract Documents as indicated below.

1.2. Compliance with these Standard Supplemental Instructions is required by the Office of State Engineer (OSE) for all State projects when competitive sealed bidding is used as the method of procurement.

1.3. All provisions of A701-1997, which are not so amended or supplemented, remain in full force and effect.

1.4. Bidders are cautioned to carefully examine the Bidding and Contract Documents for additional instructions or requirements.

2. MODIFICATIONS TO A701-1997

2.1. *Delete Section 1.1 and insert the following:*

1.1 Bidding Documents, collectively referred to as the **Invitation for Bids**, include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement, Instructions to Bidders (A-701), Supplementary Instructions to Bidders, the bid form (SE-330), the Intent to Award Notice (SE-370), and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda issued prior to execution of the Contract, and other documents set forth in the Bidding Documents. Any reference in this document to the Agreement between the Owner and Contractor, AIA Document A101, or some abbreviated reference thereof, shall mean the AIA A101, 2007 Edition as modified by OSE Form 00501 – Standard Modification to Agreement Between Owner and Contractor. Any reference in this document to the General Conditions of the Contract for Construction, AIA Document A201, or some abbreviated reference thereof, shall mean the AIA A201, 2007 Edition as modified by OSE Form 00811 – Standard Supplementary Conditions.

2.2. *In Section 1.8, delete the words “and who meets the requirements set forth in the Bidding Documents”.*

2.3. *In Section 2.1, delete the word “making” and substitute the word “submitting.”*

2.4. *In Section 2.1.1:*

After the words “Bidding Documents,” delete the word “or” and substitute the word “and.”

Insert the following at the end of this section:

Bidders are expected to examine the Bidding Documents and Contract Documents thoroughly and should request an explanation of any ambiguities, discrepancies, errors, omissions, or conflicting statements. Failure to do so will be at the Bidder’s risk. Bidder assumes responsibility for any patent ambiguity that Bidder does not bring to the Owner’s attention prior to bid opening.

2.5. *In Section 2.1.3, insert the following after the term “Contract Documents” and before the period:*

and accepts full responsibility for any pre-bid existing conditions that would affect the Bid that could have been ascertained by a site visit. As provided in Regulation 19-445.2042(B), A bidder’s failure to attend an advertised pre-bid conference will not excuse its responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the State.

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2.6. *Insert the following Sections 2.2 through 2.6:*

2.2 CERTIFICATION OF INDEPENDENT PRICE DETERMINATION

GIVING FALSE, MISLEADING, OR INCOMPLETE INFORMATION ON THIS CERTIFICATION MAY RENDER YOU SUBJECT TO PROSECUTION UNDER SECTION 16-9-10 OF THE SOUTH CAROLINA CODE OF LAWS AND OTHER APPLICABLE LAWS.

(a) By submitting an bid, the bidder certifies that—

(1) The prices in this bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder or competitor relating to—

- (i) Those prices;
- (ii) The intention to submit an bid; or
- (iii) The methods or factors used to calculate the prices offered.

(2) The prices in this bid have not been and will not be knowingly disclosed by the bidder, directly or indirectly, to any other bidder or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the bidder to induce any other concern to submit or not to submit an bid for the purpose of restricting competition.

(b) Each signature on the bid is considered to be a certification by the signatory that the signatory—

(1) Is the person in the bidder's organization responsible for determining the prices being offered in this bid, and that the signatory has not participated and will not participate in any action contrary to paragraphs (a)(1) through (a)(3) of this certification; or

(2)(i) Has been authorized, in writing, to act as agent for the bidder's principals in certifying that those principals have not participated, and will not participate in any action contrary to paragraphs (a)(1) through (a)(3) of this certification [As used in this subdivision (b)(2)(i), the term "principals" means the person(s) in the bidder's organization responsible for determining the prices offered in this bid];

(ii) As an authorized agent, does certify that the principals referenced in subdivision (b)(2)(i) of this certification have not participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this certification; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this certification.

(c) If the bidder deletes or modifies paragraph (a)(2) of this certification, the bidder must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

2.3 DRUG FREE WORKPLACE

By submitting a bid, the Bidder certifies that Bidder will maintain a drug free workplace in accordance with the requirements of Title 44, Chapter 107 of South Carolina Code of Laws, as amended.

2.4 CERTIFICATION REGARDING DEBARMENT AND OTHER RESPONSIBILITY MATTERS

(a) (1) By submitting an Bid, Bidder certifies, to the best of its knowledge and belief, that-

(i) Bidder and/or any of its Principals-

(A) Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any state or federal agency;

(B) Have not, within a three-year period preceding this bid, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in

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connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of bids; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision.

(ii) Bidder has not, within a three-year period preceding this bid, had one or more contracts terminated for default by any public (Federal, state, or local) entity.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

(b) Bidder shall provide immediate written notice to the Procurement Officer if, at any time prior to contract award, Bidder learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) If Bidder is unable to certify the representations stated in paragraphs (a)(1), Bid must submit a written explanation regarding its inability to make the certification. The certification will be considered in connection with a review of the Bidder's responsibility. Failure of the Bidder to furnish additional information as requested by the Procurement Officer may render the Bidder nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Bidder is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Bidder knowingly or in bad faith rendered an erroneous certification, in addition to other remedies available to the State, the Procurement Officer may terminate the contract resulting from this solicitation for default.

2.5 ETHICS CERTIFICATE

By submitting a bid, the bidder certifies that the bidder has and will comply with, and has not, and will not, induce a person to violate Title 8, Chapter 13 of the South Carolina Code of Laws, as amended (ethics act). The following statutes require special attention: Section 8-13-700, regarding use of official position for financial gain; Section 8-13-705, regarding gifts to influence action of public official; Section 8-13-720, regarding offering money for advice or assistance of public official; Sections 8-13-755 and 8-13-760, regarding restrictions on employment by former public official; Section 8-13-775, prohibiting public official with economic interests from acting on contracts; Section 8-13-790, regarding recovery of kickbacks; Section 8-13-1150, regarding statements to be filed by consultants; and Section 8-13-1342, regarding restrictions on contributions by contractor to candidate who participated in awarding of contract. The state may rescind any contract and recover all amounts expended as a result of any action taken in violation of this provision. If contractor participates, directly or indirectly, in the evaluation or award of public contracts, including without limitation, change orders or task orders regarding a public contract, contractor shall, if required by law to file such a statement, provide the statement required by Section 8-13-1150 to the procurement officer at the same time the law requires the statement to be filed.

2.6 RESTRICTIONS APPLICABLE TO BIDDERS & GIFTS

Violation of these restrictions may result in disqualification of your bid, suspension or debarment, and may constitute a violation of the state Ethics Act. (a) After issuance of the solicitation, ***bidder agrees not to discuss this procurement activity in any way with the Owner or its employees, agents or officials.*** All communications must be solely with the Procurement Officer. This restriction may be lifted by express written permission from the Procurement Officer. This restriction expires once a contract has been formed. (b) Unless otherwise approved in writing by the Procurement

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Officer, *bidder agrees not to give anything to the Owner, any affiliated organizations, or the employees, agents or officials of either, prior to award.* (c) Bidder acknowledges that the policy of the State is that a governmental body should not accept or solicit a gift, directly or indirectly, from a donor if the governmental body has reason to believe the donor has or is seeking to obtain contractual or other business or financial relationships with the governmental body. Regulation 19-445.2165(C) broadly defines the term donor.

2.7. Delete Section 3.1.1 and substitute the following:

3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement in the number and for the deposit sum, if any, stated therein. If so provided in the Advertisement, the deposit will be refunded to all plan holders who return the Bidding Documents in good condition within ten days after receipt of Bids. The cost of replacement of missing or damaged documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the Bidding Documents and the Bidder's deposit will be refunded.

2.8. Delete the language of Section 3.1.2 and insert the word "Reserved."

2.9. In Section 3.1.4, delete the words "and Architect may make" and substitute the words "has made."

2.10. Insert the following Section 3.1.5

3.1.5 All persons obtaining Bidding Documents from the issuing office designated in the Advertisement shall provide that office with Bidder's contact information to include the Bidder's name, telephone number, mailing address, and email address.

2.11. In Section 3.2.2:

Delete the words "and Sub-bidders"

Delete the word "seven" and substitute the word "ten"

2.12. In Section 3.2.3:

In the first Sentence, insert the word "written" before the word "Addendum."

Insert the following at the end of the section:

As provided in Regulation 19-445.2042(B), nothing stated at the pre-bid conference shall change the Bidding Documents unless a change is made by written Addendum.

2.13. Insert the following at the end of Section 3.3.1:

Reference in the Bidding Documents to a designated material, product, thing, or service by specific brand or trade name followed by the words "or equal" and "or approved equal" shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition.

2.14. Delete Section 3.3.2 and substitute the following:

3.3.2 No request to substitute materials, products, or equipment for materials, products, or equipment described in the Bidding Documents and no request for addition of a manufacturer or supplier to a list of approved manufacturers or suppliers in the Bidding Documents will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids established in the Invitation for Bids. Any subsequent extension of the date for receipt of Bids by addendum shall not extend the date for receipt of such requests unless the addendum so specifies. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

2.15. Delete Section 3.4.3 and substitute the following:

3.4.3 Addenda will be issued no later than 120 hours prior to the time for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

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3.4.5 When the date for receipt of Bids is to be postponed and there is insufficient time to issue a written Addendum prior to the original Bid Date, Owner will notify prospective Bidders by telephone or other appropriate means with immediate follow up with a written Addendum. This Addendum will verify the postponement of the original Bid Date and establish a new Bid Date. The new Bid Date will be no earlier than the fifth (5th) calendar day after the date of issuance of the Addendum postponing the original Bid Date.

3.4.6. If an emergency or unanticipated event interrupts normal government processes so that bids cannot be received at the government office designated for receipt of bids by the exact time specified in the solicitation, the time specified for receipt of bids will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal government processes resume. In lieu of an automatic extension, an Addendum may be issued to reschedule bid opening. If state offices are closed at the time a pre-bid or pre-proposal conference is scheduled, an Addendum will be issued to reschedule the conference. Useful information may be available at: http://www.scemd.org/scgovweb/weather_alert.html

2.17. In Section 4.1.1, delete the word "forms" and substitute the words "SE-330 Bid Form."**2.18. Delete Section 4.1.2 and substitute the following:**

4.1.2 Any blanks on the bid form to be filled in by the Bidder shall be legibly executed in a non-erasable medium. Bids shall be signed in ink or other indelible media.

2.19. Delete Section 4.1.3 and substitute the following:

4.1.3 Sums shall be expressed in figures.

2.20. Insert the following at the end of Section 4.1.4:

Bidder shall not make stipulations or qualify his bid in any manner not permitted on the bid form. An incomplete Bid or information not requested that is written on or attached to the Bid Form that could be considered a qualification of the Bid, may be cause for rejection of the Bid.

2.21. Delete Section 4.1.5 and substitute the following:

4.1.5 All requested Alternates shall be bid. The failure of the bidder to indicate a price for an Alternate shall render the Bid non-responsive. Indicate the change to the Base Bid by entering the dollar amount and marking, as appropriate, the box for "ADD TO" or "DEDUCT FROM". If no change in the Base Bid is required, enter "ZERO" or "No Change." For add alternates to the base bid, Subcontractor(s) listed on page BF-2 of the Bid Form to perform Alternate Work shall be used for both Alternates and Base Bid Work if Alternates are accepted.

2.22. Delete Section 4.1.6 and substitute the following:

4.1.6 Pursuant to Title 11, Chapter 35, Section 3020(b)(i) of the South Carolina Code of Laws, as amended, Section 7 of the Bid Form sets forth a list of subcontractor specialties for which Bidder is required to list only the subcontractors Bidder will use to perform the work of each listed specialty. Bidder must follow the Instructions in the Bid Form for filling out this section of the Bid Form. Failure to properly fill out Section 7 may result in rejection of Bidder's bid as non-responsive.

2.23. Delete Section 4.1.7 and substitute the following:

4.1.7 Each copy of the Bid shall state the legal name of the Bidder and the nature of legal form of the Bidder. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

2.24. Delete Section 4.2.1 and substitute the following:

4.2.1 If required by the Invitation for Bids, each Bid shall be accompanied by a bid security in an amount of not less than five percent of the Base Bid. The bid security shall be a bid bond or a certified cashier's check. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

OSE FORM 00201**STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS****2.25. Delete Section 4.2.2 and substitute the following:**

4.2.2 If a surety bond is required, it shall be written on AIA Document A310, Bid Bond, and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney. The bid bond shall:

- .1** Be issued by a surety company licensed to do business in South Carolina;
- .2** Be issued by a surety company having, at a minimum, a "Best Rating" of "A" as stated in the most current publication of "Best's Key Rating Guide, Property-Casualty", which company shows a financial strength rating of at least five (5) times the contract price.
- .3** Be enclosed in the bid envelope at the time of Bid Opening, either in paper copy or as an electronic bid bond authorization number provided on the Bid Form and issued by a firm or organization authorized by the surety to receive, authenticate and issue binding electronic bid bonds on behalf the surety.

2.26. Delete Section 4.2.3 and substitute the following:

4.2.3 By submitting a bid bond via an electronic bid bond authorization number on the Bid Form and signing the Bid Form, the Bidder certifies that an electronic bid bond has been executed by a Surety meeting the standards required by the Bidding Documents and the Bidder and Surety are firmly bound unto the State of South Carolina under the conditions provided in this Section 4.2.

2.27. Insert the following Section 4.2.4:

4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until either (a) the Contract has been executed and performance and payment bonds, if required, have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn or (c) all Bids have been rejected.

2.28. Delete Section 4.3.1 and substitute the following:

4.3.1 All copies of the Bid, the bid security, if any, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall, unless hand delivered by the Bidder, be addressed to the Owner's designated purchasing office as shown in the Invitation for Bids. The envelope shall be identified with the Project name, the Bidder's name and address and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail or special delivery service (UPS, Federal Express, etc.), the envelope should be labeled "BID ENCLOSED" on the face thereof. Bidders hand delivering their Bids shall deliver Bids to the place of the Bid Opening as shown in the Invitation for Bids. Whether or not Bidders attend the Bid Opening, they shall give their Bids to the Owner's procurement officer or his/her designee as shown in the Invitation for Bids prior to the time of the Bid Opening.

2.29. Insert the following Section 4.3.6 and substitute the following:

4.3.5 The official time for receipt of Bids will be determined by reference to the clock designated by the Owner's procurement officer or his/her designee. The procurement officer conducting the Bid Opening will determine and announce that the deadline has arrived and no further Bids or bid modifications will be accepted. All Bids and bid modifications in the possession of the procurement officer at the time the announcement is completed will be timely, whether or not the bid envelope has been date/time stamped or otherwise marked by the procurement officer.

2.30. Delete Section 4.4.2 and substitute the following:

4.4.2 Prior to the time and date designated for receipt of Bids, a Bid submitted may be withdrawn in person or by written notice to the party receiving Bids at the place designated for receipt of Bids. Withdrawal by written notice shall be in writing over the signature of the Bidder.

2.31. In Section 5.1, delete everything following the caption "OPENING OF BIDS" and substitute the following:

5.1.1 Bids received on time will be publicly opened and will be read aloud. Owner will not read aloud Bids that Owner determines, at the time of opening, to be non-responsive. .

5.1.2 At bid opening, Owner will announce the date and location of the posting of the Notice of Intended Award.

5.1.3 Owner will send a copy of the final Bid Tabulation to all Bidders within ten (10) working days of the Bid Opening.

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5.1.4 If Owner determines to award the Project, Owner will, after posting a Notice of Intended Award, send a copy of the Notice to all Bidders.

5.1.5 If only one Bid is received, Owner will open and consider the Bid.

2.32. *In Section 5.2, insert the section number “5.2.1” before the words of the “The Owner” at the beginning of the sentence.*

2.33. *Insert the following Sections 5.2.2 and 5.2.3:*

5.2.2 The reasons for which the Owner will reject Bids include, but are not limited to:

- .1** Failure by a Bidder to be represented at a Mandatory Pre-Bid Conference or site visit;
- .2** Failure to deliver the Bid on time;
- .3** Failure to comply with Bid Security requirements, except as expressly allowed by law;
- .4** Listing an invalid electronic Bid Bond authorization number on the bid form;
- .5** Failure to Bid an Alternate, except as expressly allowed by law;
- .6** Failure to list qualified Subcontractors as required by law;
- .7** Showing any material modification(s) or exception(s) qualifying the Bid;
- .8** Faxing a Bid directly to the Owner or their representative; or
- .9** Failure to include a properly executed Power-of-Authority with the bid bond.

5.2.3 The Owner may reject a Bid as nonresponsive if the prices bid are materially unbalanced between line items or sub-line items. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the Owner even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

2.34. *Delete Section 6.1 and substitute the following:*

6.1 CONTRACTOR'S RESPONSIBILITY

Owner will make a determination of Bidder's responsibility before awarding a contract. Bidder shall provide all information and documentation requested by the Owner to support the Owner's evaluation of responsibility. Failure of Bidder to provide requested information is cause for the Owner, at its option, to determine the Bidder to be non-responsible

2.35. *Delete the language of Section 6.2 and insert the word “Reserved.”*

2.36. *Delete the language of Sections 6.3.2, 6.3.3, and 6.3.4 and insert the word “Reserved” after each Section Number.*

2.37. *Insert the following Section 6.4*

6.4 CLARIFICATION

Pursuant to Section 11-35-1520(8), the Procurement Officer may elect to communicate with a Bidder after opening for the purpose of clarifying either the Bid or the requirements of the Invitation for Bids. Such communications may be conducted only with Bidders who have submitted a Bid which obviously conforms in all material aspects to the Invitation for Bids and only in accordance with Appendix D (Paragraph A(6)) to the Manual for Planning and Execution of State Permanent Improvement, Part II. Clarification of a Bid must be documented in writing and included with the Bid. Clarifications may not be used to revise a Bid or the Invitation for Bids. [Section 11-35-1520(8); R.19-445.2080]

2.38. *Delete Section 7.1.2 and substitute the following:*

7.1.2 The performance and payment bonds shall conform to the requirements of Section 11.4 of the General Conditions of the Contract. If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid.

2.39. *Delete the language of Section 7.1.3 and insert the word “Reserved.”*

2.40. *In Section 7.2, insert the words “CONTRACT, CERTIFICATES OF INSURANCE” into the caption after the word “Delivery.”*

OSE FORM 00201**STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS****2.41. Delete Section 7.2.1 and substitute the following:**

7.2.1 After expiration of the protest period, the Owner will tender a signed Contract for Construction to the Bidder and the Bidder shall return the fully executed Contract for Construction to the Owner within seven days thereafter. The Bidder shall deliver the required bonds and certificate of insurance to the Owner not later than three days following the date of execution of the Contract. Failure to deliver these documents as required shall entitle the Owner to consider the Bidder's failure as a refusal to enter into a contract in accordance with the terms and conditions of the Bidder's Bid and to make claim on the Bid Security for re-procurement cost.

2.42. Delete the language of Section 7.2.2 and insert the word "Reserved."**2.43. Delete the language of Article 8 and insert the following:**

Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on South Carolina Modified AIA Document A101, 2007, Standard Form of Agreement Between Owner and Contractor as modified by OSE Form 00501 – Standard Modification to Agreement Between Owner and Contractor.

2.44. Insert the following Article 9:**ARTICLE 9 MISCELLANEOUS****9.1 NONRESIDENT TAXPAYER REGISTRATION AFFIDAVIT INCOME TAX WITHHOLDING
IMPORTANT TAX NOTICE - NONRESIDENTS ONLY**

Withholding Requirements for Payments to Nonresidents: Section 12-8-550 of the South Carolina Code of Laws requires persons hiring or contracting with a nonresident conducting a business or performing personal services of a temporary nature within South Carolina to withhold 2% of each payment made to the nonresident. The withholding requirement does not apply to (1) payments on purchase orders for tangible personal property when the payments are not accompanied by services to be performed in South Carolina, (2) nonresidents who are not conducting business in South Carolina, (3) nonresidents for contracts that do not exceed \$10,000 in a calendar year, or (4) payments to a nonresident who (a) registers with either the S.C. Department of Revenue or the S.C. Secretary of State and (b) submits a Nonresident Taxpayer Registration Affidavit - Income Tax Withholding, Form I-312 to the person letting the contract.

For information about other withholding requirements (e.g., employee withholding), contact the Withholding Section at the South Carolina Department of Revenue at 803-898-5383 or visit the Department's website at: www.sctax.org

This notice is for informational purposes only. This Owner does not administer and has no authority over tax issues. All registration questions should be directed to the License and Registration Section at 803-898-5872 or to the South Carolina Department of Revenue, Registration Unit, Columbia, S.C. 29214-0140. All withholding questions should be directed to the Withholding Section at 803-898- 5383.

PLEASE SEE THE "NONRESIDENT TAXPAYER REGISTRATION AFFIDAVIT INCOME TAX WITHHOLDING" FORM (FORM NUMBER I-312) LOCATED AT:
<http://www.sctax.org/Forms+and+Instructions/withholding/default.htm>

9.2 CONTRACTOR LICENSING

Contractors and Subcontractors listed in Section 7 of the Bid Form who are required by the South Carolina Code of Laws to be licensed, must be licensed at the time of bidding.

9.3 SUBMITTING CONFIDENTIAL INFORMATION

For every document Bidder submits in response to or with regard to this solicitation or request, Bidder must separately mark with the word "CONFIDENTIAL" every page, or portion thereof, that Bidder contends contains information that is exempt from public disclosure because it is either (a) a trade secret as defined in Section 30-4-40(a)(1), or (b) privileged & confidential, as that phrase is used in Section 11-35-410. For every document Bidder submits in response to or with regard to this solicitation or request, Bidder must separately mark with the words "TRADE SECRET" every page, or portion thereof, that Bidder contends contains a trade secret as that term is defined by Section 39-8-20 of the Trade Secrets Act. For every document Bidder submits in response to or with regard to this solicitation or request, Bidder must separately mark with the word "PROTECTED" every page, or portion thereof, that Bidder contends is protected by Section 11-35-1810. All markings must be conspicuous; use color, bold, underlining, or some other method in order to conspicuously distinguish the mark from the other text. Do not mark your entire bid as confidential, trade secret, or protected! If your bid, or any part thereof, is improperly marked as confidential or trade

OSE FORM 00201**STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS**

secret or protected, the State may, in its sole discretion, determine it nonresponsive. If only portions of a page are subject to some protection, do not mark the entire page. By submitting a response to this solicitation, Bidder (1) agrees to the public disclosure of every page of every document regarding this solicitation or request that was submitted at any time prior to entering into a contract (including, but not limited to, documents contained in a response, documents submitted to clarify a response, & documents submitted during negotiations), unless the page is conspicuously marked "TRADE SECRET" or "CONFIDENTIAL" or "PROTECTED", (2) agrees that any information not marked, as required by these bidding instructions, as a "Trade Secret" is not a trade secret as defined by the Trade Secrets Act, & (3) agrees that, notwithstanding any claims or markings otherwise, any prices, commissions, discounts, or other financial figures used to determine the award, as well as the final contract amount, are subject to public disclosure. In determining whether to release documents, the State will detrimentally rely on Bidders's marking of documents, as required by these bidding instructions, as being either "Confidential" or "Trade Secret" or "PROTECTED". By submitting a response, Bidder agrees to defend, indemnify & hold harmless the State of South Carolina, its officers & employees, from every claim, demand, loss, expense, cost, damage or injury, including attorney's fees, arising out of or resulting from the State withholding information that Bidder marked as "confidential" or "trade secret" or "PROTECTED".

9.4 POSTING OF INTENT TO AWARD

Notice of Intent to Award, SE-370, will be posted at the following location:

Room or Area of Posting: Lobby

Building Where Posted: Facilities Management Center

Address of Building: 743 Greene Street, Columbia, SC 29208

WEB site address (if applicable): <http://purchasing.sc.edu>

Posting date will be announced at bid opening. In addition to posting the notice, the Owner will promptly send all responsive bidders a copy of the notice of intent to award and the final bid tabulation

9.5 PROTEST OF SOLICITATION OR AWARD

Any prospective bidder, offeror, contractor, or subcontractor who is aggrieved in connection with the solicitation of a contract shall protest within fifteen days of the date of issuance of the applicable solicitation document at issue. Any actual bidder, offeror, contractor, or subcontractor who is aggrieved in connection with the intended award or award of a contract shall protest within ten days of the date notification of intent to award is posted in accordance with Title 11, Chapter 35, Section 4210 of the South Carolina Code of Laws, as amended. A protest shall be in writing, shall set forth the grounds of the protest and the relief requested with enough particularity to give notice of the issues to be decided, and must be received by the State Engineer within the time provided.

Any protest must be addressed to the CPO, Office of State Engineer, and submitted in writing:

(a) by email to protest-ose@mmo.sc.gov,

(b) by facsimile at 803-737-0639, or

(c) by post or delivery to 1201 Main Street, Suite 600, Columbia, SC 29201.

By submitting a protest to the foregoing email address, you (and any person acting on your behalf) consent to receive communications regarding your protest (and any related protests) at the e-mail address from which you sent your protest.

9.6 SOLICITATION INFORMATION FROM SOURCES OTHER THAN OFFICIAL SOURCE

South Carolina Business Opportunities (SCBO) is the official state government publication for State of South Carolina solicitations. Any information on State agency solicitations obtained from any other source is unofficial and any reliance placed on such information is at the bidder's sole risk and is without recourse under the South Carolina Consolidated Procurement Code.

9.7 BUILDER'S RISK INSURANCE

Bidder's are directed to Article 11.3 of the South Carolina Modified AIA Document A201, 2007 Edition, which, unless provided otherwise in the bid documents, requires the contractor to provide builder's risk insurance on the project.

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STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

9.8 TAX CREDIT FOR SUBCONTRACTING WITH MINORITY FIRMS

Pursuant to Section 12-6-3350, taxpayers, who utilize certified minority subcontractors, may take a tax credit equal to 4% of the payments they make to said subcontractors. The payments claimed must be based on work performed directly for a South Carolina state contract. The credit is limited to a maximum of fifty thousand dollars annually. The taxpayer is eligible to claim the credit for 10 consecutive taxable years beginning with the taxable year in which the first payment is made to the subcontractor that qualifies for the credit. After the above ten consecutive taxable years, the taxpayer is no longer eligible for the credit. The credit may be claimed on Form TC-2, "Minority Business Credit." A copy of the subcontractor's certificate from the Governor's Office of Small and Minority Business (OSMBA) is to be attached to the contractor's income tax return. Taxpayers must maintain evidence of work performed for a State contract by the minority subcontractor. Questions regarding the tax credit and how to file are to be referred to: SC Department of Revenue, Research and Review, Phone: (803) 898-5786, Fax: (803) 898-5888. The subcontractor must be certified as to the criteria of a "Minority Firm" by the Governor's Office of Small and Minority Business Assistance (OSMBA). Certificates are issued to subcontractors upon successful completion of the certification process. Questions regarding subcontractor certification are to be referred to: Governor's Office of Small and Minority Business Assistance, Phone: (803) 734-0657, Fax: (803) 734-2498. Reference: SC §11-35-5010 – Definition for Minority Subcontractor & SC §11-35-5230 (B) – Regulations for Negotiating with State Minority Firms.

§ 9.9 OTHER SPECIAL CONDITIONS OF THE WORK

END OF DOCUMENT

Note: AIA Document A310

Contractor to Provide

Bid Bond

In the form of

AIA A310

**SE-330 – LUMP SUM BID
BID FORM**

Bidders shall submit bids on only Bid Form SE-330.

BID SUBMITTED BY: _____
(Bidder's Name)

BID SUBMITTED TO: University of South Carolina
(Owner's Name)

FOR PROJECT: **PROJECT NAME** USC Aiken H&SS Bldg Elevator Replacement
PROJECT NUMBER H29-9547

OFFER

§ 1. In response to the Invitation for Construction Bids and in compliance with the Instructions to Bidders for the above-named Project, the undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with the Owner on the terms included in the Bidding Documents, and to perform all Work as specified or indicated in the Bidding Documents, for the prices and within the time frames indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

§ 2. Pursuant to Section 11-35-3030(1) of the SC Code of Laws, as amended, Bidder has submitted Bid Security as follows in the amount and form required by the Bidding Documents:

- Bid Bond with Power of Attorney Electronic Bid Bond Cashier's Check

(Bidder check one)

§ 3. Bidder acknowledges the receipt of the following Addenda to the Bidding Documents and has incorporated the effects of said Addenda into this Bid:

ADDENDUM No: _____

§ 4. Bidder accepts all terms and conditions of the Invitation for Bids, including, without limitation, those dealing with the disposition of Bid Security. Bidder agrees that this Bid, including all Bid Alternates, if any, may not be revoked or withdrawn after the opening of bids, and shall remain open for acceptance for a period of 60 Days following the Bid Date, or for such longer period of time that Bidder may agree to in writing upon request of the Owner.

§ 5. Bidder herewith offers to provide all labor, materials, equipment, tools of trades and labor, accessories, appliances, warranties and guarantees, and to pay all royalties, fees, permits, licenses and applicable taxes necessary to complete the following items of construction work:

§ 6.1 BASE BID WORK *(as indicated in the Bidding Documents and generally described as follows):* Modernize existing elevators and augment associated MEP systems. Work to include fire stopping, fire dampers, upgrades to HVAC system and associated electrical/controls, fire alarm system work, door upgrades, and general construction. Scope of work above will apply for one elevator in the Humanities and Social Services (H&SS) Building. Minority and small business participation is encouraged.

_____, which sum is hereafter called the Base Bid.

(Bidder - insert Base Bid Amount on line above)

**SE-330 – LUMP SUM BID
BID FORM**

§ 6.2 BID ALTERNATES - as indicated in the Bidding Documents and generally described as follows:

ALTERNATE # 1 (Brief Description): _____

ADD TO or **DEDUCT FROM BASE BID:** _____

(Bidder to Mark appropriate box to clearly indicate the price adjustment offered for each alternate)

ALTERNATE # 2 (Brief Description): _____

ADD TO or **DEDUCT FROM BASE BID:** _____

(Bidder to Mark appropriate box to clearly indicate the price adjustment offered for each alternate)

ALTERNATE # 3 (Brief Description): _____

ADD TO or **DEDUCT FROM BASE BID:** _____

(Bidder to Mark appropriate box to clearly indicate the price adjustment offered for each alternate)

**SE-330 – LUMP SUM BID
 BID FORM**

2011 Edition

Rev. 2/14/14

§ 7. LISTING OF PROPOSED SUBCONTRACTORS PURSUANT TO SECTION 3020(b)(i), CHAPTER 35, TITLE 11 OF THE SOUTH CAROLINA CODE OF LAWS, AS AMENDED – (See Instructions on the following page BF-2A)

Bidder shall use the below-listed Subcontractors in the performance of the Subcontractor Specialty work listed:

SUBCONTRACTOR SPECIALTY By License Classification and/or Subclassification (Completed by Owner)	SUBCONTRACTOR'S PRIME CONTRACTOR'S NAME (Must be completed by Bidder) BASE BID	SUBCONTRACTOR'S PRIME CONTRACTOR'S SC LICENSE NUMBER
Mechanical - HT or PK		
Electrical - EL		
ALTERNATE 1		
ALTERNATE 2		
ALTERNATE 3		

If a Bid Alternate is accepted, Subcontractors listed for the Bid Alternate shall be used for the work of both the Alternate and the Base Bid work.

INSTRUCTIONS FOR SUBCONTRACTOR LISTING

- 1.** Section 7 of the Bid Form sets forth a list of subcontractor specialties for which bidder is required to identify by name the subcontractor(s) Bidder will use to perform the work of each listed specialty. Bidder must identify only the subcontractor(s) who will perform the work and no others.
- 2.** For purposes of subcontractor listing, a Subcontractor is an entity who will perform work or render service to the prime contractor to or about the construction site. Material suppliers, manufacturers, and fabricators that will not perform physical work at the site of the project but will only supply materials or equipment to the bidder or proposed subcontractor(s) are not subcontractors and Bidder should not insert their names in the spaces provided on the bid form. Likewise, Bidder should not insert the names of sub-subcontractors in the spaces provided on the bid form but only the names of those entities with which bidder will contract directly.
- 3.** Bidder must only insert the names of subcontractors who are qualified to perform the work of the listed specialties as specified in the Bidding Documents and South Carolina Licensing Laws.
- 4.** If under the terms of the Bidding Documents, Bidder is qualified to perform the work of a specialty listed and Bidder does not intend to subcontract such work but to use Bidder's own employees to perform such work, the Bidder must insert its own name in the space provided for that specialty.
- 5.** If Bidder intends to use multiple subcontractors to perform the work of a single specialty listing, Bidder must insert the name of each subcontractor Bidder will use, preferably separating the name of each by the word **"and"**. If Bidder intends to use both his own employees to perform a part of the work of a single specialty listing and to use one or more subcontractors to perform the remaining work for that specialty listing, bidder must insert his own name and the name of each subcontractor, preferably separating the name of each with the word **"and"**.
- 6.** Bidder may not list subcontractors in the alternative nor in a form that may be reasonably construed at the time of bid opening as a listing in the alternative. A listing that requires subsequent explanation to determine whether or not it is a listing in the alternative is non-responsive. If bidder intends to use multiple entities to perform the work for a single specialty listing, bidder must clearly set forth on the bid form such intent. Bidder may accomplish this by simply inserting the word **"and"** between the name of each entity listed for that specialty. Owner will reject as non-responsive a listing that contains the names of multiple subcontractors separated by a blank space, the word "or", a virgule (that is a /), or any separator that the Owner may reasonably interpret as a listing in the alternative.
- 7.** If Bidder is awarded the contract, bidder must, except with the approval of the owner for good cause shown, use the listed entities to perform the work for which they are listed.
- 8.** If bidder is awarded the contract, bidder will not be allowed to substitute another entity as subcontractor in place of a subcontractor listed in Section 7 of the Bid except for one or more of the reasons allowed by the SC Code of Laws.
- 9.** Bidder's failure to insert a name for each listed specialty subcontractor will render the Bid non-responsive.

SE-330 – LUMP SUM BID BID FORM

§ 8. LIST OF MANUFACTURERS, MATERIAL SUPPLIERS, AND SUBCONTRACTORS OTHER THAN SUBCONTRACTORS LISTED IN SECTION 7 ABOVE (FOR INFORMATION ONLY): Pursuant to instructions in the Invitation for Bids, if any, Bidder will provide to Owner upon the Owner's request and within 24 hours of such request, a listing of manufacturers, material suppliers, and subcontractors, other than those listed in Section 7 above, that Bidder intends to use on the project. Bidder acknowledges and agrees that this list is provided for purposes of determining responsibility and not pursuant to the subcontractor listing requirements of SC Code Ann § 11-35-3020(b)(i).

§ 9. TIME OF CONTRACT PERFORMANCE AND LIQUIDATED DAMAGES

a. **CONTRACT TIME:** Bidder agrees that the Date of Commencement of the Work shall be established in a Notice to Proceed to be issued by the Owner. Bidder agrees to substantially complete the Work within 90 calendar days from the Date of Commencement, subject to adjustments as provided in the Contract Documents.

b. **LIQUIDATED DAMAGES:** Bidder further agrees that from the compensation to be paid, the Owner shall retain as Liquidated Damages the sum of \$200.00 for each calendar day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted time for Substantial Completion as provided in the Contract Documents. This sum is intended by the parties as the predetermined measure of compensation for actual damages, not as a penalty for nonperformance.

§ 10. AGREEMENTS

a. Bidder agrees that this bid is subject to the requirements of the law of the State of South Carolina.

b. Bidder agrees that at any time prior to the issuance of the Notice to Proceed for this Project, this Project may be canceled for the convenience of, and without cost to, the State.

c. Bidder agrees that neither the State of South Carolina nor any of its agencies, employees or agents shall be responsible for any bid preparation costs, or any costs or charges of any type, should all bids be rejected or the Project canceled for any reason prior to the issuance of the Notice to Proceed.

§ 11. ELECTRONIC BID BOND

By signing below, the Principal is affirming that the identified electronic bid bond has been executed and that the Principal and Surety are firmly bound unto the State of South Carolina under the terms and conditions of the AIA Document A310, Bid Bond, included in the Bidding Documents.

Electronic Bid Bond Number: _____

Signature and Title: _____

**SE-330 – LUMP SUM BID
BID FORM**

2011 Edition

Rev. 2/14/14

BIDDER'S TAXPAYER IDENTIFICATION

FEDERAL EMPLOYER'S IDENTIFICATION NUMBER: _____

OR

SOCIAL SECURITY NUMBER: _____

CONTRACTOR'S CLASSIFICATIONS AND SUBCLASSIFICATIONS WITH LIMITATIONS

Classification(s) & Limits: _____

Subclassification(s) & Limits: _____

SC Contractor's License Number(s): _____

BY SIGNING THIS BID, THE PERSON SIGNING REAFFIRMS ALL REPRESENTATIONS AND CERTIFICATIONS MADE BY BOTH THE PERSON SIGNING AND THE BIDDER, INCLUDING WITHOUT LIMITATION, THOSE APPEARING IN ARTICLE 2 OF THE INSTRUCTIONS TO BIDDER. THE INVITATION FOR BIDS, AS DEFINED IN THE INSTRUCTIONS TO BIDDERS, IS EXPRESSLY INCORPORATE BY REFERENCE.

SIGNATURE

BIDDER'S LEGAL NAME: _____

ADDRESS: _____

BY: _____
(Signature)

DATE: _____

TITLE: _____

TELEPHONE: _____

EMAIL: _____

AIA Document A101

Standard Form of Agreement Between Owner and Contractor

Original AIA Document on file at:

Office of Facilities, Planning, and Construction

743 Greene Street

Columbia, SC 29208

OSE FORM 00501
STANDARD MODIFICATIONS TO AGREEMENT BETWEEN
OWNER AND CONTRACTOR

OWNER: University of South Carolina

PROJECT NUMBER: H29-9547

PROJECT NAME: USC Aiken H&SS Bldg Elevator Replacement

1. STANDARD MODIFICATIONS TO AIA A101-2007

1.1. These Standard Modifications amend or supplement the *Standard Form of Agreement Between Owner and Contractor* (AIA Document A101-2007) and other provisions of Bidding and Contract Documents as indicated below.

1.2. All provisions of A101-2007, which are not so amended or supplemented, remain in full force and effect.

2. MODIFICATIONS TO A101

2.1. *Insert the following at the end of Article 1:*

Any reference in this document to the Agreement between the Owner and Contractor, AIA Document A101, or some abbreviated reference thereof, shall mean the AIA A101, 2007 Edition as modified by OSE Form 00501 – Standard Modification to Agreement Between Owner and Contractor. Any reference in this document to the General Conditions of the Contract for Construction, AIA Document A201, or some abbreviated reference thereof, shall mean the AIA A201, 2007 Edition as modified by OSE Form 00811 – Standard Supplementary Conditions.

2.2. *Delete Section 3.1 and substitute the following:*

3.1 The Date of Commencement of the Work shall be the date fixed in a Notice to Proceed issued by the Owner. The Owner shall issue the Notice to Proceed to the Contractor in writing, no less than seven days prior to the Date of Commencement. Unless otherwise provided elsewhere in the contract documents, and provided the contractor has secured all required insurance and surety bonds, the contractor may commence work immediately after receipt of the Notice to Proceed.

2.3. *Delete Section 3.3 and substitute the following:*

3.3 The Contract Time shall be measured from the Date of Commencement as provided in Section 9(a) of the Bid Form (SE-330) for this Project. Contractor agrees that if the Contractor fails to achieve Substantial Completion of the Work within the Contract Time, the Owner shall be entitled to withhold or recover from the Contractor liquidated damages in the amounts set forth in Section 9(b) of the Bid Form (SE-330, subject to adjustments of this Contract Time as provided in the Contract Documents.

2.4. *In Section 5.1.1, insert the words “and Owner” after the phrase “Payment submitted to the Architect.”*

2.5. *Delete Section 5.1.3 and substitute the following:*

5.1.3 The Owner shall make payment of the certified amount to the Contractor not later than 21 days after receipt of the Application for Payment.

2.6. *In Section 5.1.6, Insert the following after the phrase “Subject to other provisions of the Contract Documents”:*

and subject to Title 12, Chapter 8, Section 550 of the South Carolina Code of Laws, as amended (Withholding Requirements for Payments to Non-Residents)

In the spaces provided in Sub-Sections 1 and 2 for inserting the retainage amount, insert “three and one-half percent (3.5%).”

OSE FORM 00501
STANDARD MODIFICATIONS TO AGREEMENT BETWEEN
OWNER AND CONTRACTOR

2.7. *In Section 5.1.8, delete the word “follows” and the colon and substitute the following:*

set forth in S.C. Code Ann. § 11-35-3030(4).

2.8. *In Section 5.1.9, delete the words “Except with the Owner’s prior approval, the” before the word “Contractor.”*

2.9. *In Section 5.2.2, delete the number 30 and substitute the number 21, delete everything following the words “Certificate for Payment” and place a period at the end of the resulting sentence.*

2.10. *Delete the language of Sections 6.1 and 6.2 and substitute the word “Reserved” for the deleted language of each Section .*

2.11. *Delete the language of Section 8.2 and substitute the word “Reserved.”*

2.12. *In Section 8.3, make the word “Representative” in the title plural, delete everything following the title, and substitute the following:*

8.3.1 Owner designates the individual listed below as its Senior Representative (“Owner's Senior Representative”), which individual has the responsibility for and, subject to Section 7.2.1 of the General Conditions, the authority to resolve disputes under Section 15.6 of the General Conditions:

Name: Tom Opal

Title: Asst Director of USC Facilities Design & Construction

Address: 743 Greene Street, Columbia, SC 29229

Telephone: 803-777-5500 **FAX:** n/a

Email: topal@fmc.sc.edu

8.3.2 Owner designates the individual listed below as its Owner's Representative, which individual has the authority and responsibility set forth in Section 2.1.1 of the General Conditions:

Name: Troy Green

Title: Project Manager

Address: 743 Greene Street, Columbia, SC 29208

Telephone: 803-777-8256 **FAX:** n/a

Email: green@fmc.sc.edu

2.13. *In Section 8.4, make the word “Representative” in the title plural, delete everything following the title, and substitute the following:*

8.4.1 Contractor designates the individual listed below as its Senior Representative (“Contractor's Senior Representative”), which individual has the responsibility for and authority to resolve disputes under Section 15.6 of the General Conditions:

Name: TBD

Title: _____

Address: _____

Telephone: _____ **FAX:** _____

Email: _____

OSE FORM 00501
STANDARD MODIFICATIONS TO AGREEMENT BETWEEN
OWNER AND CONTRACTOR

8.4.2 Contractor designates the individual listed below as its Contractor's Representative, which individual has the authority and responsibility set forth in Section 3.1.1 of the General Conditions:

Name: TBD
Title: _____
Address: _____
Telephone: _____ **FAX:** _____
Email: _____

2.14. *Add the following Section 8.6.1:*

8.6.1 The Architect's representative:

Name: Sal Napolitano
Title: Project Architect
Address: 127 Dunbar Street, Spartanburg, SC 29306
Telephone: 864-585-5678 **FAX:** 864-542-9451
Email: snapolitano@mcmillanpazdansmith.com

2.15. *In Section 9.1.7, Sub-Section 2, list the following documents in the space provided for listing documents:*

Invitation for Construction Bids (SE-310)
 Instructions to Bidders (AIA Document A701-1997)
 Standard Supplemental Instructions to Bidders (OSE Form 00201)
 Contractor's Bid (Completed SE-330)
 Notice of Intent to Award (Completed SE-370)
 Certificate of procurement authority issued by the SC Budget & Control Board

2.16. *In Article 10, delete everything after the first sentence.*

END OF DOCUMENT

AIA Document A201
General Conditions of the Contract for Construction

Original AIA Document on file at:
Office of Facilities, Planning, and Construction
743 Greene Street
Columbia, SC 29208

OSE FORM 00811

STANDARD SUPPLEMENTARY CONDITIONS

OWNER: University of South Carolina

PROJECT NUMBER: H29-9547

PROJECT NAME: USC Aiken H&SS Bldg Elevator Replacement

1 GENERAL CONDITIONS

The *General Conditions of the Contract for Construction*, AIA Document A201, 2007 Edition, Articles 1 through 15 inclusive, is a part of this Contract and is incorporated as fully as if herein set forth. For brevity, AIA Document A201 is also referred to in the Contract Documents collectively as the "General Conditions."

2 STANDARD SUPPLEMENTARY CONDITIONS

2.1 The following supplements modify, delete and/or add to the General Conditions. Where any portion of the General Conditions is modified or any paragraph, Section or clause thereof is modified or deleted by these Supplementary Conditions, the unaltered provisions of the General Conditions shall remain in effect.

2.2 Unless otherwise stated, the terms used in these Standard Supplementary Conditions which are defined in the General Conditions have the meanings assigned to them in the General Conditions.

3 MODIFICATIONS TO A201-2007

3.1 *Insert the following at the end of Section 1.1.1:*

Any reference in this document to the Agreement between the Owner and Contractor, AIA Document A101, or some abbreviated reference thereof, shall mean the AIA A101, 2007 Edition as modified by OSE Form 00501 – Standard Modification to Agreement Between Owner and Contractor. Any reference in this document to the General Conditions of the Contract for Construction, AIA Document A201, or some abbreviated reference thereof, shall mean the AIA A201, 2007 Edition as modified by OSE Form 00811 – Standard Supplementary Conditions.

3.2 *Delete the language of Section 1.1.8 and substitute the word "Reserved."*

3.3 *Add the following Section 1.1.9:*

1.1.9 NOTICE TO PROCEED

Notice to Proceed is a document issued by the Owner to the Contractor, with a copy to the Architect, directing the Contractor to begin prosecution of the Work in accordance with the requirements of the Contract Documents. The Notice to Proceed shall fix the date on which the Contract Time will commence.

3.4 *Insert the following at the end of Section 1.2.1:*

In the event of patent ambiguities within or between parts of the Contract Documents, the contractor shall 1) provide the better quality or greater quantity of Work, or 2) comply with the more stringent requirement, either or both in accordance with the Architect's interpretation.

3.5 *Delete Section 1.5.1 and substitute the following:*

1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as a violation of the Architect's or Architect's consultants' reserved rights.

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3.6 *Delete Section 2.1.1 and substitute the following:*

2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization, except as provided in Section 7.1.2. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's Representative. [Reference § 8.2 of the Agreement.]

3.7 *Delete Section 2.1.2 and substitute the following:*

2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to post Notice of Project Commencement pursuant to Title 29, Chapter 5, Section 23 of the South Carolina Code of Laws, as amended.

3.8 *Delete Section 2.2.3 and substitute the following:*

2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. Subject to the Contractor's obligations, including those in Section 3.2, the Contractor shall be entitled to rely on the accuracy of information furnished by the Owner pursuant to this Section but shall exercise proper precautions relating to the safe performance of the Work.

3.9 *Replace the period at the end of the last sentence of Section 2.2.4 with a semicolon and insert the following after the inserted semicolon:*

"however, the Owner does not warrant the accuracy of any such information requested by the Contractor that is not otherwise required of the Owner by the Contract Documents. Neither the Owner nor the Architect shall be required to conduct investigations or to furnish the Contractor with any information concerning subsurface characteristics or other conditions of the area where the Work is to be performed beyond that which is provide in the Contract Documents."

3.10 *Delete Section 2.2.5 and substitute the following:*

2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor with ten copies of the Contract Documents. The Contractor may make reproductions of the Contract Documents pursuant to Section 1.5.2. All copies of the drawings and specifications, except the Contractor's record set, shall be returned or suitably accounted for to the Owner, on request, upon completion of the Work.

3.11 *Add the following Sections 2.2.6 and 2.2.7:*

2.2.6 The Owner assumes no responsibility for any conclusions or interpretation made by the Contractor based on information made available by the Owner.

2.2.7 The Owner shall obtain, at its own cost, general building and specialty inspection services as required by the Contract Documents. The Contractor shall be responsible for payment of any charges imposed for reinspections.

3.12 *Delete Section 2.4 and substitute the following:*

2.4 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect, including but not limited to providing necessary resources, with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Directive shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

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3.13 *Insert the following at the end of Section 3.2.1:*

The Contractor acknowledges that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Owner, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Owner.

3.14 *In the third sentence of Section 3.2.4, insert the word “latent” before the word “errors.”***3.15** *In the last sentence of Section 3.3.1, insert the words “by the Owner in writing” after the word “instructed.”***3.16** *Delete the third sentence of Section 3.5 and substitute the following sentences:*

Work, materials, or equipment not conforming to these requirements shall be considered defective. Unless caused by the Contractor or a subcontractor at any tier, the Contractor’s warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage.

3.17 *Insert the following at the end of Section 3.6:*

The Contractor shall comply with the requirements of Title 12, Chapter 9 of the South Carolina Code of Laws, as amended, regarding withholding tax for nonresidents, employees, contractors and subcontractors.

3.18 *In Section 3.7.1, delete the words “the building permit as well as for other” and insert the following sentence at the end of this section:*

Pursuant to Title 10, Chapter 1, Section 180 of the South Carolina Code of Laws, as amended, no local general or specialty building permits are required for state buildings.

3.19 *Delete the last sentence of Section 3.7.5 and substitute the following:*

Adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 7.3.3.

3.20 *Delete the last sentence of Section 3.8.2.3 and substitute the following:*

The amount of the Change Order shall reflect the difference between actual costs, as documented by invoices, and the allowances under Section 3.8.2.1.

3.21 *In Section 3.9.1, insert a comma after the word “superintendent” in the first sentence and insert the following after the inserted comma:*

acceptable to the Owner,

3.22 *Delete Section 3.9.2 and substitute the following:*

3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner the name and qualifications of a proposed superintendent. The Owner may reply within 14 days to the Contractor in writing stating (1) whether the Owner has reasonable objection to the proposed superintendent or (2) that the

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Owner requires additional time to review. Failure of the Owner to reply within the 14-day period shall constitute notice of no reasonable objection.

3.23 *After the first sentence in Section 3.9.3, insert the following sentence:*

The Contractor shall notify the Owner, in writing, of any proposed change in the superintendent, including the reason therefore, prior to making such change.

3.24 *Delete Section 3.10.3 and substitute the following:*

3.10.3 Additional requirements, if any, for the constructions schedule are as follows:
(Check box if applicable to this Contract))

The construction schedule shall be in a detailed precedence-style critical path management (CPM) or primavera-type format satisfactory to the Owner and the Architect that shall also (1) provide a graphic representation of all activities and events that will occur during performance of the work; (2) identify each phase of construction and occupancy; and (3) set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents (hereinafter referred to as "Milestone Dates"). Upon review and acceptance by the Owner and the Architect of the Milestone Dates, the construction schedule shall be deemed part of the Contract Documents and attached to the Agreement as Exhibit "A." If not accepted, the construction schedule shall be promptly revised by the Contractor in accordance with the recommendations of the Owner and the Architect and resubmitted for acceptance. The Contactor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. Whenever the approved construction schedule no longer reflects actual conditions and progress of the work or the Contract Time is modified in accordance with the terms of the Contract Documents, the Contractor shall update the accepted construction schedule to reflect such conditions. In the event any progress report indicates any delays, the Contractor shall propose an affirmative plan to correct the delay, including overtime and/or additional labor, if necessary. In no event shall any progress report constitute an adjustment in the Contract Time, any Milestone Date, or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to Change Order.

3.25 *Add the following Section 3.10.4:*

3.10.4 Owner's review and acceptance of Contractor's schedule is not conducted for the purpose of either determining its accuracy and completeness or approving the construction means, methods, techniques, sequences or procedures. The Owner's approval shall not relieve the Contractor of any obligations. Unless expressly addressed in a Modification, the Owner's approval of a schedule shall not change the Contract Time.

3.26 *Add the following Section 3.12.5.1:*

3.12.5.1 The fire sprinkler shop drawings shall be prepared by a licensed fire sprinkler contractor and shall accurately reflect actual conditions affecting the required layout of the fire sprinkler system. The fire sprinkler contractor shall certify the accuracy of his shop drawings prior to submitting them for review and approval. The fire sprinkler shop drawings shall be reviewed and approved by the Architect's engineer of record who, upon approving the sprinkler shop drawings will submit them to the State Fire Marshal or other authorities having jurisdiction for review and approval. The Architect's engineer of record will submit a copy of the State Fire Marshal's approval letter to the Contractor, Architect, and OSE. Unless authorized in writing by OSE, neither the Contractor nor subcontractor at any tier shall submit the fire sprinkler shop drawings directly to the State Fire Marshal or other authorities having jurisdiction for approval.

3.27 *In the fourth sentence of Section 3.12.10, after the comma following the words "licensed design professional," insert the following:*

who shall comply with reasonable requirements of the Owner regarding qualifications and insurance and

3.28 *In Section 3.13, insert the section number "3.13.1" before the before the opening words "The Contractors shall."*

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3.29 Add the following Sections 3.13.2 and 3.13.3:

3.13.2 Protection of construction materials and equipment stored at the Project site from weather, theft, vandalism, damage, and all other adversity is solely the responsibility of the Contractor. The Contractor shall perform the work in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work shall be performed, to the fullest extent reasonably possible, in such a manner that public areas adjacent to the site of the Work shall be free from all debris, building materials, and equipment likely to cause hazardous conditions.

3.13.3 The Contractor and any entity for whom the Contractor is responsible shall not erect any sign on the Project site without the prior written consent of the Owner.

3.30 *In the first sentence of Section 3.18.1, after the parenthetical “...(other than the Work itself),...” and before the word “...but...”, insert the following:*

including loss of use resulting therefrom,

3.31 *Delete Section 4.1.1 and substitute the following:*

4.1.1 The Architect is that person or entity identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

3.32 *Insert the following at the end of Section 4.2.1:*

Any reference in the Contract Documents to the Architect taking action or rendering a decision with a “reasonable time” is understood to mean no more than fourteen days, unless otherwise specified in the Contract Documents or otherwise agreed to by the parties.

3.33 *Delete the first sentence of Section 4.2.2 and substitute the following:*

The Architect will visit the site as necessary to fulfill its obligation to the Owner for inspection services, if any, and, at a minimum, to assure conformance with the Architect’s design as shown in the Contract Documents and to observe the progress and quality of the various components of the Contractor’s Work, and to determine if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents.

3.34 *Delete the first sentence of Section 4.2.3 and substitute the following:*

On the basis of the site visits, the Architect will keep the Owner informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work.

3.35 *In Section 4.2.5, after the words “evaluations of the” and before the word “Contractor’s,” insert the following:*

Work completed and correlated with the

3.36 *Delete the first sentence of Section 4.2.11 and substitute the following:*

4.2.11 The Architect will, in the first instance, interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. Upon receipt of such request, the Architect will promptly provide the non-requesting party with a copy of the request.

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3.37 *Insert the following at the end of Section 4.2.12:*

If either party disputes the Architects interpretation or decision, that party may proceed as provided in Article 15. The Architect's interpretations and decisions may be, but need not be, accorded any deference in any review conducted pursuant to law or the Contract Documents.

3.38 *Delete Section 4.2.14 and substitute the following:*

The Architect will review and respond to requests for information about the Contract Documents so as to avoid delay to the construction of the Project. The Architect's response to such requests will be made in writing with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information. Any response to a request for information must be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. Unless issued pursuant to a Modification, supplemental Drawings or Specifications will not involve an adjustment to the Contract Sum or Contract Time.

3.39 *Delete Section 5.2.1 and substitute the following:*

5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, within fourteen days after posting of the Notice of Intent to Award the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (excluding Listed Subcontractors but including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Owner may reply within 14 days to the Contractor in writing stating (1) whether the Owner has reasonable objection to any such proposed person or entity. Failure of the Owner to reply within the 14 day period shall constitute notice of no reasonable objection.

3.40 *Delete Section 5.2.2 and substitute the following:*

5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner has made reasonable and timely objection. The Owner shall not direct the Contractor to contract with any specific individual or entity for supplies or services unless such supplies and services are necessary for completion of the Work and the specified individual or entity is the only source of such supply or services.

3.41 *In the first sentence of Section 5.2.3, delete the words "...or Architect..." in the two places they appear.***3.42** *Delete the words "...or Architect..." in the in the first sentence of Section 5.2.4 and insert the following sentence at the end of Section 5.2.4:*

The Contractor's request for substitution must be made to the Owner in writing accompanied by supporting information.

3.43 *Add the following Section 5.2.5:*

5.2.5 A Subcontractor identified in the Contractor's Bid in response the specialty subcontractor listing requirements of Section 7 of the Bid Form (SE-330) may only be substituted in accordance with and as permitted by the provisions of Title 11, Chapter 35, Section 3021 of the South Carolina Code of Laws, as amended. A proposed substitute for a Listed Subcontractor shall be subject to the Owner's approval as set forth is Section 5.2.3.

3.44 *In Section 5.3, delete everything following the heading "SUBCONTRACTUAL RELATIONS" and insert the following Sections 5.3.1, 5.3.2, 5.3.3, and 5.3.4:*

5.3.1 By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not

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prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise herein or in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.3.2 Without limitation on the generality of Section 5.3.1, each Subcontract agreement and each Sub-subcontract agreement shall include, and shall be deemed to include, the following Sections of these General Conditions: 3.2, 3.5, 3.18, 5.3, 5.4, 6.2.2, 7.3.3, 7.5, 7.6, 13.1, 13.12, 14.3, 14.4, and 15.1.6.

§ 5.3.3 Each Subcontract Agreement and each Sub-subcontract agreement shall exclude, and shall be deemed to exclude, Sections 13.2.1 and 13.6 and all of Article 15, except Section 15.1.6, of these General Conditions. In the place of these excluded sections of the General Conditions, each Subcontract Agreement and each Sub-subcontract may include Sections 13.2.1 and 13.6 and all of Article 15, except Section 15.1.6, of AIA Document A201-2007, Conditions of the Contract, as originally issued by the American Institute of Architects.

§ 5.3.4 The Contractor shall assure the Owner that all agreements between the Contractor and its Subcontractor incorporate the provisions of Subparagraph 5.3.1 as necessary to preserve and protect the rights of the Owner and the Architect under the Contract Documents with respect to the work to be performed by Subcontractors so that the subcontracting thereof will not prejudice such rights. The Contractor's assurance shall be in the form of an affidavit or in such other form as the Owner may approve. Upon request, the Contractor shall provide the Owner or Architect with copies of any or all subcontracts or purchase orders.

3.45 *Delete the last sentence of Section 5.4.1.*

3.46 *Add the following Sections 5.4.4, 5.4.5 and 5.4.6:*

§ 5.4.4 Each subcontract shall specifically provide that the Owner shall only be responsible to the subcontractor for those obligations of the Contractor that accrue subsequent to the Owner's exercise of any rights under this conditional assignment.

§ 5.4.5 Each subcontract shall specifically provide that the Subcontractor agrees to perform portions of the Work assigned to the Owner in accordance with the Contract Documents.

§ 5.4.6 Nothing in this Section 5.4 shall act to reduce or discharge the Contractor's payment bond surety's obligations to claimants for claims arising prior to the Owner's exercise of any rights under this conditional assignment.

3.47 *Delete the language of Section 6.1.4 and substitute the word "Reserved."*

3.48 *Insert the following at the end of Section 7.1.2:*

If the amount of a Modification exceeds the limits of the Owner's Construction Change Order Certification (reference Section 9.1.7.2 of the Agreement), then the Owner's agreement is not effective, and Work may not proceed, until approved in writing by the Office of State Engineer.

3.49 *Delete Section 7.2.1 and substitute the following:*

7.2.1 A Change Order is a written instrument prepared by the Architect (using State Form SE-480 "Construction Change Order") and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;

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- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

3.50 *Add the following Sections 7.2.2, 7.2.3, 7.2.4, and 7.2.5:*

7.2.2 If a Change Order provides for an adjustment to the Contract Sum, the adjustment must be calculated in accordance with Section 7.3.3.

7.2.3 At the Owner's request, the Contractor shall prepare a proposal to perform the work of a proposed Change Order setting forth the amount of the proposed adjustment, if any, in the Contract Sum; and the extent of the proposed adjustment, if any, in the Contract Time. Any proposed adjustment in the Contract sum shall be prepared in accordance with Section 7.2.2. The Owner's request shall include any revisions to the Drawings or Specifications necessary to define any changes in the Work. Within fifteen days of receiving the request, the Contractor shall submit the proposal to the Owner and Architect along with all documentation required by Section 7.6.

7.2.4 If the Contractor requests a Change Order, the request shall set forth the proposed change in the Work and shall be prepared in accordance with Section 7.2.3. If the Contractor requests a change to the Work that involves a revision to either the Drawings or Specifications, the Contractor shall reimburse the Owner for any expenditures associated with the Architects' review of the proposed revisions, except to the extent the revisions are accepted by execution of a Change Order.

7.2.5 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited to, any adjustments to the Contract Sum or the Contract Time.

3.51 *Delete 7.3.3 and substitute the following:*

7.3.3 PRICE ADJUSTMENTS

§ 7.3.3.1 If any Modification, including a Construction Change Directive, provides for an adjustment to the Contract Sum, the adjustment shall be based on whichever of the following methods is the most valid approximation of the actual cost to the contractor, with overhead and profit as allowed by Section 7.5:

- .1 Mutual acceptance of a lump sum;
- .2 Unit prices stated in the Contract Documents, except as provided in Section 7.3.4, or subsequently agreed upon;
- .3 Cost attributable to the events or situations under applicable clauses with adjustment of profits or fee, all as specified in the contract, or subsequently agreed upon by the parties, or by some other method as the parties may agree; or
- .4 As provided in Section 7.3.7.

§ 7.3.3.2 Consistent with Section 7.6, costs must be properly itemized and supported by substantiating data sufficient to permit evaluation before commencement of the pertinent performance or as soon after that as practicable. All costs incurred by the Contractor must be justifiably compared with prevailing industry standards. Except as provided in Section 7.5, all adjustments to the Contract Price shall be limited to job specific costs and shall not include indirect costs, overhead, home office overhead, or profit.

3.52 *Delete Section 7.3.7 and substitute the following:*

7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall make an initial determination, consistent with Section 7.3.3, of the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in Section 7.5. In such case, and also under Section 7.3.3.1.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

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- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others; and
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work.

3.53 *Delete Section 7.3.8 and substitute the following:*

7.3.8 Using the percentages stated in Section 7.5, any adjustment to the Contract Sum for deleted work shall include any overhead and profit attributable to the cost for the deleted Work.

3.54 *Add the following Sections 7.5 and 7.6:***7.5 AGREED OVERHEAD AND PROFIT RATES**

7.5.1 For any adjustment to the Contract Sum for which overhead and profit may be recovered, other than those made pursuant to Unit Prices stated in the Contract Documents, the Contractor agrees to charge and accept, as full payment for overhead and profit, the following percentages of costs attributable to the change in the Work. The percentages cited below shall be considered to include all indirect costs including, but not limited to: field and office managers, supervisors and assistants, incidental job burdens, small tools, and general overhead allocations. The allowable percentages for overhead and profit are as follows:

- .1 To the Contractor for work performed by the Contractor's own forces, 17% of the Contractor's actual costs.
- .2 To each Subcontractor for work performed by the Subcontractor's own forces, 17% of the subcontractor's actual costs.
- .3 To the Contractor for work performed by a subcontractor, 10% of the subcontractor's actual costs (not including the subcontractor's overhead and profit).

7.6 PRICING DATA AND AUDIT**§ 7.6.1 Cost or Pricing Data.**

Upon request of the Owner or Architect, Contractor shall submit cost or pricing data prior to execution of a Modification which exceeds \$500,000. Contractor shall certify that, to the best of its knowledge and belief, the cost or pricing data submitted is accurate, complete, and current as of a mutually determined specified date prior to the date of pricing the Modification. Contractor's price, including profit, shall be adjusted to exclude any significant sums by which such price was increased because Contractor furnished cost or pricing data that was inaccurate, incomplete, or not current as of the date specified by the parties. Notwithstanding Subparagraph 9.10.4, such adjustments may be made after final payment to the Contractor.

§ 7.6.2 Cost or pricing data means all facts that, as of the date specified by the parties, prudent buyers and sellers would reasonably expect to affect price negotiations significantly. Cost or pricing data are factual, not judgmental; and are verifiable. While they do not indicate the accuracy of the prospective contractor's judgment about estimated future costs or projections, they do include the data forming the basis for that judgment. Cost or pricing data are more than historical accounting data; they are all the facts that can be reasonably expected to contribute to the soundness of estimates of future costs and to the validity of determinations of costs already incurred.

§ 7.6.3 Records Retention.

As used in Section 7.6, the term "records" means any books or records that relate to cost or pricing data that Contractor is required to submit pursuant to Section 7.6.1. Contractor shall maintain records for three years from the date of final payment, or longer if requested by the chief procurement officer. The Owner may audit Contractor's records at reasonable times and places.

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3.55 Delete Section 8.2.2 and substitute the following:

8.2.2 The Contractor shall not knowingly commence operations on the site or elsewhere prior to the effective date of surety bonds and insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such surety bonds or insurance.

3.56 Delete Section 8.3.1 and substitute the following:

8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the control of the Contractor and any subcontractor at any tier; or by delay authorized by the Owner pending dispute resolution; or by other causes that the Architect determines may justify delay, then to the extent such delay will prevent the Contractor from achieving Substantial Completion within the Contract Time and provided the delay (1) is not caused by the fault or negligence of the Contractor or a subcontractor at any tier and (2) is not due to unusual delay in the delivery of supplies, machinery, equipment, or services when such supplies, machinery, equipment, or services were obtainable from other sources in sufficient time for the Contractor to meet the required delivery, the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

3.57 Insert the following at the end of Section 9.1:

All changes to the Contract Sum shall be adjusted in accordance with Section 7.3.3.

3.58 Delete Section 9.2 and substitute the following:

9.2 SCHEDULE OF VALUES

9.2.1 The Contractor shall submit to the Architect, within ten days of full execution of the Agreement, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. As requested by the Architect, the Contractor and each Subcontractor shall prepare a trade payment breakdown for the Work for which each is responsible, such breakdown being submitted on a uniform standardized format approved by the Architect and Owner. The breakdown shall be divided in detail, using convenient units, sufficient to accurately determine the value of completed Work during the course of the Project. The Contractor shall update the schedule of values as required by either the Architect or Owner as necessary to reflect:

- .1 the description of Work (listing labor and material separately);
- .2 the total value;
- .3 the percent and value of the Work completed to date;
- .4 the percent and value of previous amounts billed; and
- .5 the current percent completed and amount billed.

9.2.2 Any schedule of values or trade breakdown that fails to include sufficient detail, is unbalanced, or exhibits "front-loading" of the value of the Work shall be rejected. If a schedule of values or trade breakdown is used as the basis for payment and later determined to be inaccurate, sufficient funds shall be withheld from future Applications for Payment to ensure an adequate reserve (exclusive of normal retainage) to complete the Work.

3.59 Delete Section 9.3.1 and substitute the following:

Monthly, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2., for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require (such as copies of requisitions from Subcontractors and material suppliers) and shall reflect retainage and any other adjustments provided in Section 5 of the Agreement. If required by the Owner or Architect, the Application for Payment shall be accompanied by a current construction schedule.

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3.60 In Section 9.3.2, add the following words to the end of the second sentence:

provided such materials or equipment will be subsequently incorporated in the Work

Insert the following at the end of Section 9.3.2:

The Contractor shall 1) protect such materials from diversion, vandalism, theft, destruction, and damage, 2) mark such materials specifically for use on the Project, and 3) segregate such materials from other materials at the storage facility. The Architect and the Owner shall have the right to make inspections of the storage areas at any time.

3.61 *In Section 9.4.2, in the first sentence, after the words “Work has progressed to the point indicated,” insert the following:*

in both the Application for Payment and, if required to be submitted by the Contractor, the accompanying current construction schedule

In the last sentence, delete the third item starting with “(3) reviewed copies” and ending with “Contractor’s right to payment,”

3.62 *In Section 9.5.1, in the first sentence, delete the word “may” after the opening words “The Architect” and substitute the word “shall.”*

In Section 9.5.1, insert the following sentence after the first sentence:

The Architect shall withhold a Certificate of Payment if the Application for Payment is not accompanied by the current construction schedule required by Section 3.10.1.

3.63 *In Section 9.6.2, delete the word “The...” at the beginning of the first sentence and substitute the following:*

Pursuant to Chapter 6 of Title 29 of the South Carolina Code of Laws, as amended, the

3.64 *Delete Section 9.7 and substitute following:*

9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment to the Owner, through no fault of the Contractor, within seven days after receipt of the Contractor’s Application for Payment, or if the Owner does not pay the Contractor within seven days after the time established in the Contract Documents the amount certified by the Architect or awarded by a final dispute resolution order, then the Contractor may, upon seven additional days’ written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased, in accordance with the provisions of Section 7.3.3, by the amount of the Contractor’s reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

3.65 *Insert the following words at the end of the sentence in Section 9.8.1:*

and when all required occupancy permits, if any, have been issued and copies of same have been delivered to the Owner.

3.66 *In Section 9.8.2, insert the word “written” after the word “comprehensive” and before the word “list.”*

3.67 *Delete Section 9.8.3 and substitute the following:*

9.8.3.1 Upon receipt of the Contractor’s list, the Architect, with the Owner and any other person the Architect or the Owner choose, will make an inspection on a date and at a time mutually agreeable to the Architect, Owner, and Contractor, to determine whether the Work or designated portion thereof is substantially complete. The Contractor shall furnish access for the inspection and testing as provided in this Contract. The inspection shall include a

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demonstration by the Contractor that all equipment, systems and operable components of the Work function properly and in accordance with the Contract Documents. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion. If more than one Substantial Completion inspection is required, the Contractor shall reimburse the Owner for all costs of reinspections or, at the Owner's option, the costs may be deducted from payments due to the Contractor.

9.8.3.2 If the Architect and Owner concur in the Contractor's assessment that the Work or a portion of the Work is safe to occupy, the Owner and Contractor may arrange for a Certificate of Occupancy Inspection by OSE. The Owner, Architect, and Contractor shall be present at OSE's inspection. Upon verifying that the Work or a portion of the Work is substantially complete and safe to occupy, OSE will issue, as appropriate, a Full or Partial Certificate of Occupancy.

3.68 *In the second sentence of Section 9.8.5, delete the words "and consent of surety, if any."*

3.69 *In the first sentence of Section 9.9.1, delete the words "Section 11.3.1.5" and substitute the words "Section 11.3.1.3."*

3.70 *Delete Section 9.10.1 and substitute the following:*

9.10.1 Unless the parties agree otherwise in the Certificate of Substantial Completion, the Contractor shall achieve Final Completion no later than thirty days after Substantial Completion. Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect, with the Owner and any other person the Architect or the Owner choose, will make an inspection on a date and at a time mutually agreeable to the Architect, Owner, and Contractor, and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. If more than one Final Completion inspection is required, the Contractor shall reimburse the Owner for all costs of reinspections or, at the Owner's option, the costs may be deducted from payments due to the Contractor. If the Contractor does not achieve final completion within thirty days after Substantial Completion or the timeframe agreed to by the parties in the Certificate of Substantial Completion, whichever is greater, the Contractor shall be responsible for any additional Architectural fees resulting from the delay.

3.71 *Delete the first sentence of Section 9.10.2 and substitute the following:*

Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner, (6) required Training Manuals, (7) equipment Operations and Maintenance Manuals, (8) any certificates of testing, inspection or approval required by the Contract Documents and not previously provided (9) all warranties and guarantees required under or pursuant to the Contract Documents, and (10) one copy of the Documents required by Section 3.11.

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3.72 Delete the first sentence of Section 9.10.3 and substitute the following:

If, after Substantial Completion of the Work, final completion thereof is delayed 60 days through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted.

3.73 Delete Section 9.10.5 and substitute the following:

§9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those specific claims in stated amounts that have been previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

3.74 Add the following Section 9.10.6:

9.10.6 If OSE has not previously issued a Certificate of Occupancy for the entire Project, the Parties shall arrange for a representative of OSE to participate in the Final Completion Inspection. Representatives of the State Fire Marshal's Office and other authorities having jurisdiction may be present at the Final Completion Inspection or otherwise inspect the completed Work and advise the Owner whether the Work meets their respective requirements for the Project.

3.75 Delete Section 10.3.1 and substitute the following:

10.3.1 If the Contractor encounters a hazardous material or substance which was not discoverable as provided in Section 3.2.1 and not required by the Contract Documents, and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons or serious loss to real or personal property resulting from such material or substance encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing. Hazardous materials or substances are those hazardous, toxic, or radioactive materials or substances subject to regulations by applicable governmental authorities having jurisdiction, such as, but not limited to, the S.C. Department of Health and Environmental Control, the U.S. Environmental Protection Agency, and the U.S. Nuclear Regulatory Commission.

3.76 Insert the following at the end of Section 10.3.2:

In the absence of agreement, the Architect will make an interim determination regarding any delay or impact on the Contractor's additional costs. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15. Any adjustment in the Contract Sum shall be determined in accordance with Section 7.3.3.

3.77 Delete Section 10.3.3 and substitute the following:

10.3.3 The Work in the affected area shall be resumed immediately following the occurrence of any one of the following events: (a) the Owner causes remedial work to be performed that results in the absence of hazardous materials or substances; (b) the Owner and the Contractor, by written agreement, decide to resume performance of the Work; or (c) the Work may safely and lawfully proceed, as determined by an appropriate governmental authority or as evidenced by a written report to both the Owner and the Contractor, which is prepared by an environmental engineer reasonably satisfactory to both the Owner and the Contractor.

3.78 In Section 10.3.5, delete the word "The" at the beginning of the sentence and substitute the following:

In addition to its obligations under Section 3.18, the

3.79 Delete the language of Section 10.3.6 and substitute the word "Reserved."

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3.92 Delete the first sentence of Section 11.3.7 and substitute the following:

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent the property insurance provided by the Contractor pursuant to this Section 11.3 covers and pays for the damage, except such rights as they have to proceeds of such insurance held by the Contractor as fiduciary.

3.93 Delete the first sentence of Section 11.3.8 and substitute the following:

A loss insured under the Contractor's property insurance shall be adjusted by the Contractor as fiduciary and made payable to the Contractor as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10.

3.94 Delete Section 11.3.9 and substitute the following:

11.3.9 If required in writing by a party in interest, the Contractor as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Contractor's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Contractor shall deposit in a separate account proceeds so received, which the Contractor shall distribute in accordance with such agreement as the parties in interest may reach. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor.

3.95 Delete Section 11.3.10 and substitute the following:

11.3.10 The Contractor as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Contractor's exercise of this power; if such objection is made, the dispute shall be resolved in the manner provided in the contract between the parties in dispute as the method of binding dispute resolution. The Contractor as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with a final order or determination issued by the appropriate authority having jurisdiction over the dispute..

3.96 Delete Section 11.4.1 and substitute the following:

11.4.1 Before commencing any services hereunder, the Contractor shall provide the Owner with Performance and Payment Bonds, each in an amount not less than the Contract Price set forth in Article 4 of the Agreement. The Surety shall have, at a minimum, a "Best Rating" of "A" as stated in the most current publication of "Best's Key Rating Guide, Property-Casualty". In addition, the Surety shall have a minimum "Best Financial Strength Category" of "Class V", and in no case less than five (5) times the contract amount. The Performance Bond shall be written on Form SE-355, "Performance Bond" and the Payment Bond shall written on Form SE-357, "Labor and Material Payment Bond", and both shall be made payable to the Owner.

3.97 Delete Section 11.4.2 and substitute the following:

11.4.2 The Performance and Labor and Material Payment Bonds shall:

- .1** be issued by a surety company licensed to do business in South Carolina;
- .2** be accompanied by a current power of attorney and certified by the attorney-in-fact who executes the bond on the behalf of the surety company; and
- .3** remain in effect for a period not less than one (1) year following the date of Substantial Completion or the time required to resolve any items of incomplete Work and the payment of any disputed amounts, whichever time period is longer.

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3.98 *Add the following Sections 11.4.3 and 11.4.4:*

11.4.3 Any bonds required by this Contract shall meet the requirements of the South Carolina Code of Laws and Regulations, as amended.

11.4.4 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

3.99 *Delete Section 12.1.1 and substitute the following:*

12.1.1 If a portion of the Work is covered contrary to the requirements specifically expressed in the Contract Documents, including inspections of work-in-progress required by all authorities having jurisdiction over the Project, it must, upon demand of the Architect or authority having jurisdiction, be uncovered for observation and be replaced at the Contractor's expense without change in the Contract Time.

3.100 *In Section 12.2.2.1, delete the words "and to make a claim for breach of warranty" at the end of the third sentence.*

3.101 *In Section 12.2.2.3, add the following to the end of the sentence:*

unless otherwise provided in the Contract Documents.

3.102 *Insert the following at the end of Section 12.2.4:*

If, prior to the date of Substantial Completion, the Contractor, a Subcontractor, or anyone for whom either is responsible, uses or damages any portion of the Work, including, without limitation, mechanical, electrical, plumbing, and other building systems, machinery, equipment, or other mechanical device, the Contractor shall cause such item to be restored to "like new" condition at no expense to the Owner.

3.103 *Delete Section 13.1 and substitute the following:*

13.1 GOVERNING LAW

The Contract, any dispute, claim, or controversy relating to the Contract, and all the rights and obligations of the parties shall, in all respects, be interpreted, construed, enforced and governed by and under the laws of the State of South Carolina, except its choice of law rules.

3.104 *Delete Section 13.2, including its Sub-Sections 13.2.1 and 13.2.2, and substitute the following:*

13.2 SUCCESSORS AND ASSIGNS

The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract as a whole, or in part, without written consent of the other and then only in accordance with and as permitted by Regulation 19-445.2180 of the South Carolina Code of Regulations, as amended. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

3.105 *Delete Section 13.3 and substitute the following:*

13.3 WRITTEN NOTICE

Unless otherwise permitted herein, all notices contemplated by the Contract Documents shall be in writing and shall be deemed given:

- .1** upon actual delivery, if delivery is by hand;
- .2** upon receipt by the transmitting party of confirmation or reply, if delivery is by electronic mail, facsimile, telex or telegram;
- .3** upon receipt, if delivery is by the United States mail.

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Notice to Contractor shall be to the address provided in Section 8.3.2 of the Agreement. Notice to Owner shall be to the address provided in Section 8.2.2 of the Agreement. Either party may designate a different address for notice by giving notice in accordance with this paragraph.

3.106 *In Section 13.4.1, insert the following at the beginning of the sentence:*

Unless expressly provided otherwise,

3.107 *Add the following Section 13.4.3:*

13.4.3 Notwithstanding Section 9.10.4, the rights and obligations which, by their nature, would continue beyond the termination, cancellation, rejection, or expiration of this contract shall survive such termination, cancellation, rejection, or expiration, including, but not limited to, the rights and obligations created by the following clauses:

1.5 Ownership and Use of Drawings, Specifications and Other Instruments of Service;

3.5 Warranty

3.17 Royalties, Patents and Copyrights

3.18 Indemnification

7.6 Cost or Pricing Data

11.1 Contractor's Liability Insurance

11.4 Performance and Payment Bond

15.1.6 Claims for Listed Damages

15.1.7 Waiver of Claims Against the Architect

15.6 Dispute Resolution

15.4 Service of Process

3.108 *Delete Section 13.6 and substitute the following:*

13.6 INTEREST

Payments due to the Contractor and unpaid under the Contract Documents shall bear interest only if and to the extent allowed by Title 29, Chapter 6, Article 1 of the South Carolina Code of Laws. Amounts due to the Owner shall bear interest at the rate of one percent a month or a pro rata fraction thereof on the unpaid balance as may be due.

3.109 *Delete the language of Section 13.7 and substitute the word "Reserved."*

3.110 *Add the following Sections 13.8 through 13.16:*

13.8 PROCUREMENT OF MATERIALS BY OWNER

The Contractor accepts assignment of all purchase orders and other agreements for procurement of materials and equipment by the Owner that are identified as part of the Contract Documents. The Contractor shall, upon delivery, be responsible for the storage, protection, proper installation, and preservation of such Owner purchased items, if any, as if the Contractor were the original purchaser. The Contract Sum includes, without limitation, all costs and expenses in connection with delivery, storage, insurance, installation, and testing of items covered in any assigned purchase orders or agreements. Unless the Contract Documents specifically provide otherwise, all Contractor warranty of workmanship and correction of the Work obligations under the Contract Documents shall apply to the Contractor's installation of and modifications to any Owner purchased items,.

13.9 INTERPRETATION OF BUILDING CODES

As required by Title 10, Chapter 1, Section 180 of the South Carolina Code of Laws, as amended, OSE shall determine the enforcement and interpretation of all building codes and referenced standards on state buildings. The Contractor shall refer any questions, comments, or directives from local officials to the Owner and OSE for resolution.

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13.10 MINORITY BUSINESS ENTERPRISES

Contractor shall notify Owner of each Minority Business Enterprise (MBE) providing labor, materials, equipment, or supplies to the Project under a contract with the Contractor. Contractor's notification shall be via the first monthly status report submitted to the Owner after execution of the contract with the MBE. For each such MBE, the Contractor shall provide the MBE's name, address, and telephone number, the nature of the work to be performed or materials or equipment to be supplied by the MBE, whether the MBE is certified by the South Carolina Office of Small and Minority Business Assistance, and the value of the contract.

13.11 SEVERABILITY

If any provision or any part of a provision of the Contract Documents shall be finally determined to be superseded, invalid, illegal, or otherwise unenforceable pursuant to any applicable Legal Requirements, such determination shall not impair or otherwise affect the validity, legality, or enforceability of the remaining provision or parts of the provision of the Contract Documents, which shall remain in full force and effect as if the unenforceable provision or part were deleted.

13.12 ILLEGAL IMMIGRATION

Contractor certifies and agrees that it will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agrees to provide to the State upon request any documentation required to establish either: (a) that Title 8, Chapter 14 is inapplicable both to Contractor and its subcontractors or sub-subcontractors; or (b) that Contractor and its subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." Contractor agrees to include in any contracts with its subcontractors language requiring its subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in their contracts with the sub-subcontractors language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14. (An overview is available at www.procurement.sc.gov)

13.13 SETOFF

The Owner shall have all of its common law, equitable, and statutory rights of set-off.

13.14 DRUG-FREE WORKPLACE

The Contractor certifies to the Owner that Contractor will provide a Drug-Free Workplace, as required by Title 44, Chapter 107 of the South Carolina Code of Laws, as amended.

13.15 FALSE CLAIMS

According to the S.C. Code of Laws § 16-13-240, "a person who by false pretense or representation obtains the signature of a person to a written instrument or obtains from another person any chattel, money, valuable security, or other property, real or personal, with intent to cheat and defraud a person of that property is guilty" of a crime.

13.16 NON-INDEMNIFICATION:

Any term or condition is void to the extent it requires the State to indemnify anyone. It is unlawful for a person charged with disbursements of state funds appropriated by the General Assembly to exceed the amounts and purposes stated in the appropriations. (§ 11-9-20) It is unlawful for an authorized public officer to enter into a contract for a purpose in which the sum is in excess of the amount appropriated for that purpose. It is unlawful for an authorized public officer to divert or appropriate the funds arising from any tax levied and collected for any one fiscal year to the payment of an indebtedness contracted or incurred for a previous year. (§ 11-1-40)

3.111 *Delete Section 14.1.1 and substitute the following:*

14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 45 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires substantially all Work to be stopped; or

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- .2 An act of government, such as a declaration of national emergency that requires substantially all Work to be stopped.
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents and the Contractor has stopped work in accordance with Section 9.7

3.112 *Insert the following at the end of Section 14.1.3:*

Any adjustment to the Contract Sum pursuant to this Section shall be made in accordance with the requirements of Article 7.

3.113 *In Section 14.1.4, replace the word “repeatedly” with the word “persistently.”***3.114** *Delete Section 14.2.1 and substitute the following:***14.2.1** The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials, or otherwise fails to prosecute the Work, or any separable part of the Work, with the diligence, resources and skill that will ensure its completion within the time specified in the Contract Documents, including any authorized adjustments;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the Contract Documents and the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

3.115 *In Section 14.2.2, delete the parenthetical statement “, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action,” immediately following the word “Owner” in the first line.***3.116** *In Section 14.2.4, replace the words “Initial Decision Maker” with the word “Architect”***3.117** *Add the following Section 14.2.5:*

14.2.5 If, after termination for cause, it is determined that the Owner lacked justification to terminate under Section 14.2.1, or that the Contractor’s default was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Owner under Section 14.4.

3.118 *Delete the second sentence of Section 14.3.2 and substitute the following:*

Any adjustment to the Contract Sum made pursuant to this section shall be made in accordance with the requirements of Article 7.3.3.

3.119 *Delete Section 14.4.1 and substitute the following:*

14.4.1 The Owner may, at any time, terminate the Contract, in whole or in part for the Owner’s convenience and without cause. The Owner shall give written notice of the termination to the Contractor specifying the part of the Contract terminated and when termination becomes effective.

3.120 *Delete Section 14.4.2 and substitute the following:*

14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner’s convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work;

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- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders; and
- .4 complete the performance of the Work not terminated, if any.

3.121 *Delete Section 14.4.3 and substitute the following:*

14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, costs incurred by reason of such termination, and any other adjustments otherwise allowed by the Contract. Any adjustment to the Contract Sum made pursuant to this Section 14.4 shall be made in accordance with the requirements of Article 7.3.3.

3.122 *Add the following Sections 14.4.4, 14.4.5, and 14.5:*

14.4.4 Contractor's failure to include an appropriate termination for convenience clause in any subcontract shall not (i) affect the Owner's right to require the termination of a subcontract, or (ii) increase the obligation of the Owner beyond what it would have been if the subcontract had contained an appropriate clause.

14.4.5 Upon written consent of the Contractor, the Owner may reinstate the terminated portion of this Contract in whole or in part by amending the notice of termination if it has been determined that:

- .1 the termination was due to withdrawal of funding by the General Assembly, Governor, or Budget and Control Board or the need to divert project funds to respond to an emergency as defined by Regulation 19-445.2110(B) of the South Carolina Code of Regulations, as amended;
- .2 funding for the reinstated portion of the work has been restored;
- .3 circumstances clearly indicate a requirement for the terminated work; and
- .4 reinstatement of the terminated work is advantageous to the Owner.

14.5 CANCELLATION AFTER AWARD BUT PRIOR TO PERFORMANCE

Pursuant to Title 11, Chapter 35 and Regulation 19-445.2085 of the South Carolina Code of Laws and Regulations, as amended, this contract may be canceled after award but prior to performance.

3.123 *Insert the following sentence after the second sentence of Section 15.1.1:*

A voucher, invoice, payment application or other routine request for payment that is not in dispute when submitted is not a Claim under this definition.

3.124 *Delete Section 15.1.2 and substitute the following:***15.1.2 NOTICE OF CLAIMS**

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Architect. Such notice shall include sufficient information to advise the Architect and other party of the circumstances giving rise to the claim, the specific contractual adjustment or relief requested and the basis of such request. Claims by either party arising prior to the date final payment is due must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later except as stated for adverse weather days in Section 15.1.5.2. By failing to give written notice of a Claim within the time required by this Section, a party expressly waives its claim.

3.125 *Delete Section 15.1.3 and substitute the following:***15.1.3 CONTINUING CONTRACT PERFORMANCE**

Pending final resolution of a Claim, including any administrative review allowed under Section 15.6, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will issue Certificates for Payment in accordance with the initial decisions and determinations of the Architect.

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3.126 *Insert the following at the end of Section 15.1.5.1:*

Claims for an increase in the Contract Time shall be based on one additional calendar day for each full calendar day that the Contractor is prevented from working.

3.127 *Insert the following Sub-Sections at the end of Section 15.1.5.2:*

- .1** Claims for adverse weather shall be based on actual weather conditions at the job site or other place of performance of the Work, as documented in the Contractor's job site log.
- .2** For the purpose of this Contract, a total of five (5) calendar days per calendar month (non-cumulative) shall be anticipated as "adverse weather" at the job site, and such time will not be considered justification for an extension of time. If, in any month, adverse weather develops beyond the five (5) days, the Contractor shall be allowed to claim additional days to compensate for the excess weather delays only to the extent of the impact on the approved construction schedule. The remedy for this condition is for an extension of time only and is exclusive of all other rights and remedies available under the Contract Documents or imposed or available by law.
- .3** The Contractor shall submit monthly with their pay application all claims for adverse weather conditions that occurred during the previous month. The Architect shall review each monthly submittal in accordance with Section 15.5 and inform the Contractor and the Owner promptly of its evaluation. Approved days shall be included in the next Change Order issued by the Architect. Adverse weather conditions not claimed within the time limits of this Subparagraph shall be considered to be waived by the Contractor. Claims will not be allowed for adverse weather days that occur after the scheduled (original or adjusted) date of Substantial Completion.

3.128 *Delete Section 15.1.6 and substitute the following:***15.1.6 CLAIMS FOR LISTED DAMAGES**

Notwithstanding any other provision of the Contract Documents, including Section 1.2.1, but subject to a duty of good faith and fair dealing, the Contractor and Owner waive Claims against each other for listed damages arising out of or relating to this Contract.

15.1.6.1 For the Owner, listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) costs suffered by a third party unable to commence work, (vi) attorney's fees, (vii) any interest, except to the extent allowed by Section 13.6 (Interest), (viii) lost revenue and profit for lost use of the property, (ix) costs resulting from lost productivity or efficiency.

15.1.6.2 For the Contractor, listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) attorney's fees, (vi) any interest, except to the extent allowed by Section 13.6 (Interest); (vii) unamortized equipment costs; and, (viii) losses incurred by subcontractors for the types of damages the Contractor has waived as against the Owner. Without limitation, this mutual waiver is applicable to all damages due to either party's termination in accordance with Article 14.

15.1.6.3 Nothing contained in this Section shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. This mutual waiver is not applicable to amounts due or obligations under Section 3.18 (Indemnification).

3.129 *Add the following Section 15.1.7:***15.1.7 WAIVER OF CLAIMS AGAINST THE ARCHITECT**

Notwithstanding any other provision of the Contract Documents, including Section 1.2.1, but subject to a duty of good faith and fair dealing, the Contractor waives all claims against the Architect and any other design professionals who provide design and/or project management services to the Owner, either directly or as independent contractors or subcontractors to the Architect, for listed damages arising out of or relating to this

OSE FORM 00811**STANDARD SUPPLEMENTARY CONDITIONS**

Contract. The listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) attorney's fees, (vi) any interest; (vii) unamortized equipment costs; and, (viii) losses incurred by subcontractors for the types of damages the Contractor has waive as against the Owner. This mutual waiver is not applicable to amounts due or obligations under Section 3.18 (Indemnification).

3.130 *Delete the language of Sections 15.2, 15.3, and 15.4, including all Sub-Sections, and substitute the word "Reserved" for the deleted language of each Section and Sub-Section.*

3.131 *Add the following Sections 15.5 and 15.6 with their sub-sections:*

**15.5 CLAIM AND DISPUTES - DUTY OF COOPERATION, NOTICE, AND ARCHITECTS
INITIAL DECISION**

15.5.1 Contractor and Owner are fully committed to working with each other throughout the Project to avoid or minimize claims. To further this goal, Contractor and Owner agree to communicate regularly with each other and the Architect at all times notifying one another as soon as reasonably possible of any issue that if not addressed may cause loss, delay, and/or disruption of the Work. If claims do arise, Contractor and Owner each commit to resolving such claims in an amicable, professional, and expeditious manner to avoid unnecessary losses, delays, and disruptions to the Work.

15.5.2 Claims shall first be referred to the Architect for initial decision. An initial decision shall be required as a condition precedent to resolution pursuant to Section 15.6 of any Claim arising prior to the date of final payment, unless 30 days have passed after the Claim has been referred to the Architect with no decision having been rendered, or after all the Architect's requests for additional supporting data have been answered, whichever is later. The Architect will not address claims between the Contractor and persons or entities other than the Owner.

15.5.3 The Architect will review Claims and within ten days of the receipt of a Claim (1) request additional supporting data from the claimant or a response with supporting data from the other party or (2) render an initial decision in accordance with Section 15.5.5.

15.5.4 If the Architect requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Architect when the response or supporting data will be furnished or (3) advise the Architect that all supporting data has already been provided. Upon receipt of the response or supporting data, the Architect will render an initial decision in accordance with Section 15.5.5.

15.5.5 The Architect will render an initial decision in writing; (1) stating the reasons therefor; and (2) notifying the parties of any change in the Contract Sum or Contract Time or both. The Architect will deliver the initial decision to the parties within two weeks of receipt of any response or supporting data requested pursuant to Section 16.4, or within such longer period as may be mutually agreeable to the parties. If the parties accept the initial decision, the Architect shall prepare a Change Order with appropriate supporting documentation for the review and approval of the parties and the Office of State Engineer. If either the Contractor, Owner, or both, disagree with the initial decision, the Contractor and Owner shall proceed with dispute resolution in accordance with the provisions of Section 15.6.

15.5.6 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

15.6 DISPUTE RESOLUTION

15.6.1 If a claim is not resolved pursuant to Section 15.5 to the satisfaction of either party, both parties shall attempt to resolve the dispute at the field level through discussions between Contractor's Representative and Owner's Representative. If a dispute cannot be resolved through Contractor's Representative and Owner's Representative, then the Contractor's Senior Representative and the Owner's Senior Representative, upon the request of either party, shall meet as soon as conveniently possible, but in no case later than twenty-one days after such a request is made, to attempt to resolve such dispute. Prior to any meetings between the Senior

OSE FORM 00811

STANDARD SUPPLEMENTARY CONDITIONS

Representatives, the parties will exchange relevant information that will assist the parties in resolving their dispute. The meetings required by this Section are a condition precedent to resolution pursuant to Section 15.6.2.

15.6.2 If after meeting in accordance with the provisions of Section 15.6.1, the Senior Representatives determine that the dispute cannot be resolved on terms satisfactory to both the Contractor and the Owner, then either party may submit the dispute by written request to South Carolina’s Chief Procurement Officer for Construction (CPOC). Except as otherwise provided in Article 15, all claims, claims, or controversies relating to the Contract shall be resolved exclusively by the appropriate Chief Procurement Officer in accordance with Title 11, Chapter 35, Article 17 of the South Carolina Code of Laws, or in the absence of jurisdiction, only in the Court of Common Pleas for, or in the absence of jurisdiction a federal court located in, Richland County, State of South Carolina. Contractor agrees that any act by the State regarding the Contract is not a waiver of either the State’s sovereign immunity or the State’s immunity under the Eleventh Amendment of the United State’s Constitution.

15.6.3 If any party seeks resolution to a dispute pursuant to Section 15.6.2, the parties shall participate in non-binding mediation to resolve the claim. If the claim is governed by Title 11, Chapter 35, Article 17 of the South Carolina Code of Laws as amended and the amount in controversy is \$100,000.00 or less, the CPOC shall appoint a mediator, otherwise, the mediation shall be conducted by an impartial mediator selected by mutual agreement of the parties, or if the parties cannot so agree, a mediator designated by the American Arbitration Association (“AAA”) pursuant to its Construction Industry Mediation Rules. The mediation will be governed by and conducted pursuant to a mediation agreement negotiated by the parties or, if the parties cannot so agree, by procedures established by the mediator.

15.6.4 Without relieving any party from the other requirements of Sections 15.5 and 15.6, either party may initiate proceedings in the appropriate forum prior to initiating or completing the procedures required by Sections 15.5 and 15.6 if such action is necessary to preserve a claim by avoiding the application of any applicable statutory period of limitation or repose.

15.6.5 SERVICE OF PROCESS

Contractor consents that any papers, notices, or process necessary or proper for the initiation or continuation of any claims, claims, or controversies relating to the Contract; for any court action in connection therewith; or for the entry of judgment on any award made, may be served on Contractor by certified mail (return receipt requested) addressed to Contractor at the address provided for the Contractor’s Senior Representative or by personal service or by any other manner that is permitted by law, in or outside South Carolina. Notice by certified mail is deemed duly given upon deposit in the United States mail.

3.132 Add the following Article 16:

ARTICLE 16 PROJECT-SPECIFIC REQUIREMENTS AND INFORMATION

16.1. Inspection Requirements: *(Indicate the inspection services required by the Contract)*

- Special Inspections are required and are not part of the Contract Sum. *(see section 01400)*
- Building Inspections are required and are not part of the Contract Sum. *(see section 01400)*
- Building Inspections are required and are part of the Contract Sum.

The inspections required for this Work are :
(Indicate which services are required and the provider)

- Civil: _____
- Structural: _____
- Mechanical: TBD
- Plumbing: _____
- Electrical: TBD
- Gas: _____
- Other *(list)*: Fire Alarm & Elevator Code Inspection - TBD

Remarks: _____

OSE FORM 00811**STANDARD SUPPLEMENTARY CONDITIONS**

16.1.1 Contractor shall schedule and request inspections in an orderly and efficient manner and shall notify the Owner whenever the Contractor schedules an inspection in accordance with the requirements of Section 16.1. Contractor shall be responsible for the cost of inspections scheduled and conducted without the Owner's knowledge and for any increase in the cost of inspections resulting from the inefficient scheduling of inspections.

16.2 List Cash Allowances, if any. *(Refer to attachments as needed. If none, enter NONE)*

none

16.3. Requirements for Record Drawings, if any. *(Refer to attachments as needed. If none, enter NONE)*

none

16.4. Requirements for Shop Drawings and other submittals, if any, including number, procedure for submission, list of materials to be submitted, etc. *(Refer to attachments as needed. If none, enter NONE)*

Section 01 33 00 - Submittal Procedures

16.5. Requirements for signage, on-site office or trailer, utilities, restrooms, etc., in addition to the Contract, if any. *(Refer to attachments as needed. If none, enter NONE)*

Out of Order sign to be placed at elevator on both floors. Sign denoting above ceiling work to be placed in lobby and associated areas where contractor is working.

16.6. Requirements for Project Cleanup in addition to the Contract, if any. *(Refer to attachments as needed. If none, enter NONE)*

Contractor is expected to clean up project site each day of construction. All packing materials to be discarded in dumpster.

16.7. List all attachments that modify these General Conditions. *(If none, enter NONE)*

none

USC SUPPLEMENTAL GENERAL CONDITIONS
FOR CONSTRUCTION PROJECTS

1. Contractor's employees shall take all reasonable means not to interrupt the flow of student traffic in building corridors, lobbies and stairs. All necessary and reasonable safety precautions shall be taken to prevent injury to building occupants while transporting materials and equipment through the building to the work area. Providing safe, accessible, plywood pedestrian ways around construction may be required if a suitable alternative route is not available.
2. Fraternalization between Contractor's employees and USC students, faculty or staff is strictly prohibited-zero tolerance!
3. USC will not tolerate rude, abusive or degrading behavior on the job site. Heckling and cat-calling directed toward students, faculty or staff or any other person on USC property is strictly prohibited. Any contractor whose employees violate this requirement will be assessed a fine of up to \$500 per violation.
4. Contractor's employees must adhere to the University's policy of maintaining a drug-free and smoke-free/tobacco free workplace.
5. Contractor must sign a Contractor Key Receipt/Return form before any keys are issued. Keys must be returned immediately upon the completion of the work. The Contractor will bear the cost of any re-keying necessary due to the loss of or failure to return keys.
6. A welding permit must be issued by the University Fire Marshall before any welding can begin inside a building. Project Manager will coordinate.
7. Contractor must notify the University immediately upon the discovery of suspect material such as those potentially containing asbestos or other such hazardous materials. These materials **must not** be disturbed until approved by the USC Project Manager.
8. At the beginning of the project, the USC Project Manager will establish the Contractor's lay-down area. This area will also be used for the Contractor's work vehicles. No personal vehicles will be allowed in this area, or in any areas surrounding the construction site that are not regular or authorized parking lots. Personal vehicles must be parked in the perimeter parking lots. Parking permits can be obtained at the USC Parking Office located in the Pendleton Street parking garage. The lay down area will be clearly identified to the contractor by the PM, with a sketch or drawing provided to Parking. In turn, the contractor will mark off this area with a sign containing the project name, PM name, Contractor name and contact number, and end date. Where this area is subject to foot traffic, protective barriers will be provided as specified by the PM. The area will be maintained in a neat and orderly fashion. Vehicles parked in the lay down area (or designated parking areas) will be clearly marked or display a CPC furnished placard for identification.

9. Contractor will be responsible for providing its own temporary toilet facilities, unless prior arrangements are made with the USC Project Manager.
10. Use of USC communications facilities (telephones, computers, etc.) by the Contractor is prohibited, unless prior arrangements are made with the USC Project Manager.
11. For all projects over \$100,000, including IDC 's, an SE-395, Contractor Performance Evaluation, will be completed by the USC Project Manager and reviewed with the GC at the beginning of the project and a copy given to the GC. At the end of the project the form will be completed and a Construction Performance rating will be established.
12. Contractor is responsible for removal of all debris from the site, and is required to provide the necessary dumpsters which will be emptied at least one times per week. Construction waste must not be placed in University dumpsters. THE CONSTRUCTION SITE MUST BE THOROUGHLY CLEANED WITH ALL TRASH PICKED UP AND PROPERLY DISPOSED OF ON A DAILY BASIS AND THE SITE MUST BE LEFT IN A SAFE AND SANITARY CONDITION EACH DAY. THE UNIVERSITY WILL INSPECT JOB SITES REGULARLY AND WILL FINE ANY CONTRACTOR FOUND TO BE IN VIOLATION OF THIS REQUIREMENT AN AMOUNT OF UP TO \$1,000 PER VIOLATION.
13. **Contractor must provide all O&M manuals, as-built drawings, and training of USC personnel on new equipment, controls, etc. prior to Substantial Completion. Final payment will not be made until this is completed.**
14. The contractor will comply with all regulations set forth by OSHA and SCDHEC. Contractor must also adhere to USC's internal policies and procedures (available by request). As requested, the contractor will submit all Safety Programs and Certificates of Insurance to the University for review.
15. Tree protection fencing is required to protect existing trees and other landscape features to be preserved within a construction area. The limits of this fence will be evaluated for each situation with the consultant, USC Arborist and USC Project Manager. The tree protection fence shall be 5' high chain link fence unless otherwise approved by USC Project Manager. No entry or materials storage will be allowed inside the tree protection zone. A 4" layer of mulch shall be placed over the tree protection area to maintain moisture in the root zone.
16. Where it is necessary to cross walks, tree root zones (i.e., under canopy) or lawns the following measures shall be taken: For single loads up to 9,000 lbs., a 3/4" minimum plywood base shall be placed over areas impacted. For single loads over 9,000 lbs., two layers of 3/4" plywood is required.
17. For projects requiring heavy loads to cross walks tree root zones or lawns. A construction entry road consisting of 10' X 16' oak logging mates on 12" coarse, chipped, hardwood base. Mulch and logging mats shall be supplemented throughout the project to keep matting structurally functional.

18. Any damage to existing landscaping (including lawn areas) will be remediated before final payment is made.
19. Orange safety fence to be provided by the contractor. (USC Arborist, Kevin Curtis may be contacted at 777-0033 or 315-0319)

Campus Vehicle Expectations

1. All motorized vehicles on the University campus are expected to travel and park on roadways and/or in parking stalls.
2. All motorized vehicle traffic on USC walkways must first receive the Landscape Manager=s authorization. Violators may be subject to fines and penalties.
3. All motorized vehicles that leak or drip liquids are prohibited from traveling or parking on walks or landscaped areas.
4. Contractors, vendors, and delivery personnel are required to obtain prior parking authorization before parking in a designated space. Violators may be subject to fines and/or penalties. See Item 10 below.
5. Drivers of equipment or motor vehicles that damage university hardscape or landscape will be held personally responsible for damages and restoration expense.
6. Vehicle drivers who park on landscape or drives must be able to produce written evidence of need or emergency requiring parking on same.
7. All vehicles parked on landscape, hardscape, or in the process of service delivery, must display adequate safety devices, i.e. flashing lights, cones, signage, etc.
8. All drivers of equipment and vehicles will be respectful of University landscape, equipment, structures, fixtures and signage.
9. All incidents of property damage will be reported to Parking Services or the Work Management Center.
10. Parking on campus is restricted to spaces designated by Parking Services at the beginning of the project. Once the project manager and contractor agree on how many spaces are needed, the project manager will obtain a placard for each vehicle. This placard must be hung from the mirror of the vehicle, otherwise a ticket will be issued and these tickets cannot be “fixed”. Parking spaces are restricted to work vehicles only; no personal vehicles.

Project Name: USC Aiken H&SS Bldg Elevator Replacement

Project Number: H29-9547

University of South Carolina

CONTRACTOR'S ONE YEAR GUARANTEE

STATE OF _____

COUNTY OF _____

WE _____
as Contractor on the above-named project, do hereby guarantee that all work executed under the requirements of the Contract Documents shall be free from defects due to faulty materials and /or workmanship for a period of one (1) year from date of acceptance of the work by the Owner and/or Architect/Engineer; and hereby agree to remedy defects due to faulty materials and/or workmanship, and pay for any damage resulting wherefrom, at no cost to the Owner, provided; however, that the following are excluded from this guarantee;

Defects or failures resulting from abuse by Owner.

Damage caused by fire, tornado, hail, hurricane, acts of God, wars, riots, or civil commotion.

[Name of Contracting Firm]

*By _____

Title _____

*Must be executed by an office of the Contracting Firm.

SWORN TO before me this _____ day of _____, 2____ (seal)

_____ State

My commission expires _____

SE-355
Performance Bond

2011 Edition
Rev.10-29-12

KNOW ALL MEN BY THESE PRESENTS, that *(Insert full name or legal title and address of Contractor)*

Name: _____
Address: _____

Hereinafter referred to as "Contractor", and *(Insert full name and address of principal place of business of Surety)*

Name: _____
Address: _____

Hereinafter called the "surety", are jointly and severally held and firmly bound unto *(Insert full name and address of Agency)*

Name: University of South Carolina
Address: 743 Greene Street
Columbia, SC 29208

hereinafter referred to as "Agency", or its successors or assigns, the sum of _____ (\$ _____), being the sum of the Bond to which payment to be well and truly made, the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____ entered into a contract with Agency to construct

State Project Name: USC Aiken H&SS Bldg Elevator Replacement
State Project Number: H29-9547

Brief Description of Awarded Work, as found on the SE-330, Bid Form: Modernize existing elevators and augment associated MEP systems. Work to include fire stopping, fire dampers, upgrades to HVAC system and associated electrical/controls, fire alarm system work, door upgrades, and general construction. Scope of work above will apply for one elevator in the Humanities and Social Services (H&SS) Building. Minority and small business participation is encouraged.

In accordance with Drawings and Specifications prepared by *(Insert full name and address of A/E)*

Name: McMillan Pazdan Smith Architecture, LLC
Address: 127 Dunbar Street
Spartanburg, SC 29304

Which agreement is by reference made a part hereof, and is hereinafter referred to as the Contract.

IN WITNESS WHEREOF, Surety and Contractor, intending to be legally bound hereby, subject to the terms stated herein, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

DATED this _____ day of _____, 2____ BOND NUMBER _____
(shall be no earlier than Date of Contract)

CONTRACTOR

SURETY

By: _____
(Seal)

By: _____
(Seal)

Print Name: _____

Print Name: _____

Print Title: _____

Print Title: _____
(Attach Power of Attorney)

Witness: _____

Witness: _____

(Additional Signatures, if any, appear on attached page)

Performance Bond

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Agency for the full and faithful performance of the contract, which is incorporated herein by reference

2. If the Contractor performs the contract, the Surety and the Contractor have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.

3. The Surety's obligation under this Bond shall arise after:

3.1 The Agency has notified the Contractor and the Surety at the address described in paragraph 10 below, that the Agency is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If the Agency, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the Agency's right, if any, subsequently to declare a Contractor Default; or

3.2 The Agency has declared a Contractor Default and formally terminated the Contractor's right to complete the Contract.

4. The Surety shall, within 15 days after receipt of notice of the Agency's declaration of a Contractor Default, and at the Surety's sole expense, take one of the following actions:

4.1 Arrange for the Contractor, with consent of the Agency, to perform and complete the Contract; or

4.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Agency for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the Agency and the contractor selected with the Agency's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the Agency the amount of damages as described in paragraph 7 in excess of the Balance of the Contract Sum incurred by the Agency resulting from the Contractor Default; or

4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and:

4.4.1 After investigation, determine the amount for which it may be liable to the Agency and, within 60 days of waiving its rights under this paragraph, tender payment thereof to the Agency; or

4.4.2 Deny liability in whole or in part and notify the Agency, citing the reasons therefore.

5. Provided Surety has proceeded under paragraphs 4.1, 4.2, or 4.3, the Agency shall pay the Balance of the Contract Sum to either:

5.1 Surety in accordance with the terms of the Contract; or

5.2 Another contractor selected pursuant to paragraph 4.3 to perform the Contract.

5.3 The balance of the Contract Sum due either the Surety or another contractor shall be reduced by the amount of damages as described in paragraph 7.

6. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond 15 days after receipt of written notice from the Agency to the Surety demanding that the Surety perform its obligations under this Bond, and the Agency shall be entitled to

enforce any remedy available to the Agency.

6.1 If the Surety proceeds as provided in paragraph 4.4, and the Agency refuses the payment tendered or the Surety has denied liability, in whole or in part, then without further notice the Agency shall be entitled to enforce any remedy available to the Agency.

6.2 Any dispute, suit, action or proceeding arising out of or relating to this Bond shall be governed by the Dispute Resolution process defined in the Contract Documents and the laws of the State of South Carolina.

7. After the Agency has terminated the Contractor's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Agency shall be those of the Contractor under the Contract, and the responsibilities of the Agency to the Surety shall those of the Agency under the Contract. To a limit of the amount of this Bond, but subject to commitment by the Agency of the Balance of the Contract Sum to mitigation of costs and damages on the Contract, the Surety is obligated to the Agency without duplication for:

7.1 The responsibilities of the Contractor for correction of defective Work and completion of the Contract; and

7.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

7.3 Damages awarded pursuant to the Dispute Resolution Provisions of the Contract. Surety may join in any Dispute Resolution proceeding brought under the Contract and shall be bound by the results thereof; and

7.4 Liquidated Damages, or if no Liquidated Damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. The Surety shall not be liable to the Agency or others for obligations of the Contractor that are unrelated to the Contract, and the Balance of the Contract Sum shall not be reduced or set-off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Agency or its heirs, executors, administrators, or successors.

9. The Surety hereby waives notice of any change, including changes of time, to the contract or to related subcontracts, purchase orders and other obligations.

10. Notice to the Surety, the Agency or the Contractor shall be mailed or delivered to the address shown on the signature page.

11. Definitions

11.1 Balance of the Contract Sum: The total amount payable by the Agency to the Contractor under the Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts to be received by the Agency in settlement of insurance or other Claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Contract.

11.2 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform the Contract or otherwise to comply with the terms of the Contract.

SE-357
Labor and Material Payment Bond

2011 Edition
Rev.10-29-12

KNOW ALL MEN BY THESE PRESENTS, that *(Insert full name or legal title and address of Contractor)*

Name: _____
Address: _____

Hereinafter referred to as "Contractor", and *(Insert full name and address of principal place of business of Surety)*

Name: _____
Address: _____

Hereinafter called the "surety", are jointly and severally held and firmly bound unto *(Insert full name and address of Agency)*

Name: University of South Carolina
Address: 743 Greene Street
Columbia, SC 29208

hereinafter referred to as "Agency", or its successors or assigns, the sum of _____ (\$ _____), being the sum of the Bond to which payment to be well and truly made, the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____ entered into a contract with Agency to construct

State Project Name: USC Aiken H&SS Bldg Elevator Replacement
State Project Number: H29-9547

Brief Description of Awarded Work, as found on the SE-330, Bid Form: Modernize existing elevators and augment associated MEP systems. Work to include fire stopping, fire dampers, upgrades to HVAC system and associated electrical/controls, fire alarm system work, door upgrades, and general construction. Scope of work above will apply for one elevator in the Humanities and Social Services (H&SS) Building. Minority and small business participation is encouraged.

In accordance with Drawings and Specifications prepared by *(Insert full name and address of A/E)*

Name: McMillan Pazdan Smith Architecture, LLC
Address: 127 Dunbar Street
Spartanburg, SC 29304

Which agreement is by reference made a part hereof, and is hereinafter referred to as the Contract.

IN WITNESS WHEREOF, Surety and Contractor, intending to be legally bound hereby, subject to the terms stated herein, do each cause this Labor and Material Payment Bond to be duly executed on its behalf by its authorized officer, agent or representative.

DATED this _____ day of _____, 2____ BOND NUMBER _____
(shall be no earlier than Date of Contract)

CONTRACTOR

SURETY

By: _____
(Seal)

By: _____
(Seal)

Print Name: _____

Print Name: _____

Print Title: _____

Print Title: _____
(Attach Power of Attorney)

Witness: _____

Witness: _____

(Additional Signatures, if any, appear on attached page)

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Agency to pay for all labor, materials and equipment required for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the Agency, this obligation shall be null and void if the Contractor:

2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants; and

2.2 Defends, indemnifies and holds harmless the Agency from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract.

3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.

4. With respect to Claimants, and subject to the provisions of Title 29, Chapter 5 and the provisions of §11-35-3030(2)(c) of the SC Code of Laws, as amended, the Surety's obligation under this Bond shall arise as follows:

4.1 Every person who has furnished labor, material or rental equipment to the Contractor or its subcontractors for the work specified in the Contract, and who has not been paid in full therefore before the expiration of a period of ninety (90) days after the date on which the last of the labor was done or performed by him or material or rental equipment was furnished or supplied by him for which such claim is made, shall have the right to sue on the payment bond for the amount, or the balance thereof, unpaid at the time of institution of such suit and to prosecute such action for the sum or sums justly due him.

4.2 A remote claimant shall have a right of action on the payment bond upon giving written notice by certified or registered mail to the Contractor within ninety (90) days from the date on which such person did or performed the last of the labor or furnished or supplied the last of the material or rental equipment upon which such claim is made.

4.3 Every suit instituted upon a payment bond shall be brought in a court of competent jurisdiction for the county or circuit in which the construction contract was to be performed, but no such suit shall be commenced after the expiration of one year after the day on which the last of the labor was performed or material or rental equipment was supplied by the person bringing suit.

5. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

5.1 Send an answer to the Claimant, with a copy to the Agency, within sixty (60) days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

5.2 Pay or arrange for payment of any undisputed amounts.

5.3 The Surety's failure to discharge its obligations under this paragraph 5 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a claim. However, if the Surety fails to discharge its obligations under this paragraph 5, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs to recover any sums found to be due and owing to the Claimant.

6. Amounts owed by the Agency to the Contractor under the Contract shall be used for the performance of the Contract and to

satisfy claims, if any, under any Performance Bond. By the Contractor furnishing and the Agency accepting this Bond, they agree that all funds earned by the contractor in the performance of the Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Agency's prior right to use the funds for the completion of the Work.

7. The Surety shall not be liable to the Agency, Claimants or others for obligations of the Contractor that are unrelated to the Contract. The Agency shall not be liable for payment of any costs or expenses of any claimant under this bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

9. Notice to the Surety, the Agency or the Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the Agency or the contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

10. By the Contractor furnishing and the Agency accepting this Bond, they agree that this Bond has been furnished to comply with the statutory requirements of the South Carolina Code of Laws, as amended, and further, that any provision in this Bond conflicting with said statutory requirements shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.

11. Upon request of any person or entity appearing to be a potential beneficiary of this bond, the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

12. Any dispute, suit, action or proceeding arising out of or relating to this Bond shall be governed by the laws of the State of South Carolina.

13. DEFINITIONS

13.1 Claimant: An individual or entity having a direct contract with the Contractor or with a Subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the Contractor and the Contractor's Subcontractors, and all other items for which a mechanic's lien might otherwise be asserted.

13.2 Remote Claimant: A person having a direct contractual relationship with a subcontractor of the Contractor or subcontractor, but no contractual relationship expressed or implied with the Contractor.

13.3 Contract: The agreement between the Agency and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

REQUEST FOR SUBSTITUTE FORM

INSTRUCTIONS

Please read the specifications before completing this form.

This form is only applicable to requests for substitutes that are made during the Bidding Phase. All requests for substitutes after Contract Execution shall be in accordance with the General Requirements Section 01 25 00 Substitution Procedures and approved by the State Engineer. Although the form is detailed and the requested information is specific, it is no more than what was requested from manufactures that are listed in the project specifications. However, approval of this form does not necessarily imply approval for future projects. Products, materials, and components not specified or approved but are installed will be removed and replaced with acceptable products, materials, components at the Contractors expense.

Submit this form along with all required supporting product data, specifications and performance criteria when requesting the use of products or services that are not listed in the Specifications.

Receipt of inquiries or submittals without this completed Request For Substitute form will not be considered. Include only one request for substitution on each form. Incomplete forms; forms with vague or unspecific answers; forms without supporting data to substantiate equal or superior quality/design; forms that do not include requested proof, verification, reports, and substantiating documentation; or forms received after the time established in the Instructions will be disapproved.

The manufacturer's published literature, description, capabilities, operating and performance parameters, options, accessories, etc. of all submitted substitutes shall meet or exceed those published by the manufacturer of the specified item even if they are not specifically mentioned in the Contract Documents. Products of manufacturers other than those specified may be acceptable after proper submittal to the Architect and after the Architect's review. However, manufacturers capable of providing specified products shall not, for the convenience of their normal production methods, vary from the specified product.

Where test data and standards are being submitted as supporting data and for comparison with the specified item, submit certified data provided by an independent testing laboratory. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria and denoting the differences between the specified item the substitute item. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item. Where a performance criterion is not listed in the specifications, comply with the specified product manufacturer's published data for performance criteria. Identify and define all abbreviations and acronyms. All substitutes shall meet all of the minimum performance criteria of the specified product. Submittals not complying with this provision will be considered incomplete, unacceptable, and will be rejected. Where not applicable or NA is entered, state why the item is not applicable. Knowingly and intentionally providing incorrect information is fraud.

Complete the following parts as follows:

PART 1: Complete for all requests for substitutes. Contains general, substitute product, marketing/sales, manufacturer, warranty.

PART 6: Complete only for painting substitutes.

PART 1 (All Substitutes)
Project Name

Date:

Specification No.:

Drawing No. Reference:

Name of Specified Item:

Substitute Information

Name of Substitute:

Manufacturer of Substitute:
Name:

Address:

Telephone No.:
Years in Business:

Fax No:

General Information

1. Has the entity submitting this Request For Substitute read and fully understands the applicable specifications and stated provisions. Yes ___ No ____. If no, please explain.
2. Is this request being made by a General Contractor? ___; Sub-Contractor/Installer? ___;
Product Manufacturer? ___; Manufacturer's Representative? ___
If known, please give the name and address of the general contractor or subcontractor/installer.
3. If the entity requesting the substitute will not be the installer, please provide the following information about the intended installer if known:
Name:

Address:

Telephone No.: Fax No:
Years in Business: Years installing this product:
Did the manufacturer certify the installer? Yes ___ No ___ If yes, when:
Is the certification still effective? Yes ___ No ___
Did the manufacturer train the installer? Yes ___ No ___ If yes, when:

4. If the entity requesting the substitute is a distributor, list all installers within 50 miles of the project site that you sell to:

5. Who will service the substitute?

6. Why is this substitute being requested? Competitive pricing or being local are not acceptable answers. Please be specific! If specified product will not be available in sufficient time for installation, submit supporting information that appropriate lead time was considered when inquiring or ordering. Submit proof including dated inquiry, dated purchase order, and dated correspondence from manufacturer.

Substitute Product Information

1. Including installation and operational costs, will the substitute be less expensive than the specified entity? Yes ____ No ____ Same _____. (Don't know or can't be determined are not an acceptable answers)
 - a. If No or the same, why should the substitute be considered? If more expensive, why is it more expensive? (Please be specific!).

 - b. If less expensive, why is it less expensive? (Please be specific)

2. What is the functional and physical difference between the specified item and the substitute? If there are no differences, why should this substitute be approved? (Please be specific!)

3. Other than cost, what are the proven and verifiable benefits or advantages of the substitute item? (Please be specific! Convince us. Don't just reference product data. Being local does not necessarily mean better or more economical. Mention any unique benefits or attributes). If there are none, why should this substitute be approved?
 - a. If the substitute is more economical, why is it more economical? Please provide detailed cost comparison including material and labor as to why costs are more economical.

 - b. If the substitute is better, why/how is it better? Show side-by-side comparison

- c. What does the substitute do that the specified will not do?
- d. If service for the substitute is better, why/how is it better?
4. Are there any known failures of the substitute? If so, where and when did the failures occur and what was the probable cause of the failures?
- 5 Will the Owner have difficulty getting the substitute serviced or repaired?
- 6 Does the substitute installer meet all of the specified qualifications and requirements? Yes: ___
No: ___. If no, please describe the differences.
7. Will the proposed substitution affect dimensions shown on the Drawings? Yes ___ No ___. If yes, please explain.
8. Will the proposed substitution have an adverse affect on other trades, the construction schedule, or specified warranty requirements. Yes ___ No ___ If yes, please explain.
10. Will maintenance and service parts for the proposed substitution will be readily available locally? Yes ___ No ___ If no, please explain.
11. Will the proposed substitute meet or exceed all aspects of the specifications, including overall performance, appearance, and manufacturer's/installers qualifying criteria stated in the Contract Documents? Yes ___ No ___ If no, please explain.
- 12 Will the proposed substitute meet all applicable governing codes, regulations, and listed or indicated UL assemblies? Yes ___ No ___ Not Applicable _____. If no, please explain.
13. Does the substitute have any affect on other contractors or trades? Yes ___ No ___. If yes, please explain.

Installer Information

If this request for substitute is being submitted by a manufacturer, general contractor, or distributor, complete the following installer information for each installer that may be selected. If this is for a metal roof installer, omit this section and complete Part 7 of this form.

1. Who will install the substitute Product? Provide
Name
Address
Telephone No.
Contact Person?
2. How long has installer been in business? _____ Years
3. How long has the installer operated under this name? _____ Years
4. Has installer ever operated under a different name? Yes ___ No ___
5. If yes, under what name?

6. If this request for substitute is being submitted by a manufacturer, general contractor, or distributor, how long have you had a business relationship with the installer? ____years.
7. Will installer purchase the substitute or specified product directly from the manufacturer? Yes ____ No _____. If no, please provide name and address of entity the product will be purchased from?
8. Years experience installing the specified or substitute product/system? ____years.
9. When required by the contract documents, has the installer been trained, qualified, and approved by the manufacturer prior to the date of Advertisement or Invitation for Bids for this project? Yes ____ No _____. If yes, how was approval obtained?
10. Has the installer ever had a manufacturer's approval or certification revoked because of unsatisfactory performance? Yes ____ No _____. If yes, please explain.
11. Will installer maintain a trained work force, including a non-working supervisor on project site at all time installation is in progress? Yes ____ No _____. If no, please explain why?
12. Will the installer install the entire product/system with own employees? Yes ____ No. _____. If no, please explain.
13. Does the installer presently have the staff and equipment on board to perform the contracted work? Yes ____ No _____. If no, please explain. For the purpose of this Contract, the installer's own employees are considered employees for which the installer contributes directly to and is directly financially responsible for the following employee expenses:
 - a. All Federal, State and Local Taxes
 - b. Social Security
 - c. Insurance
 - d. Workers Compensation
 - e. Holidays
 - f. Vacations
 - g. Sick Time
 - h. Retirement
14. Has the installer successfully completed a minimum of 5 projects of the size and complexity as required fro this project? Yes ____ No _____.
15. Has the installer completed at least 80% of projects on time and under budget? Yes ____ No _____.
16. Has the installer been refused a bond in the last 5 years? Yes ____ No _____. If no, please submit proof.
17. Does the installer provide a written warranty? If yes, length of material and labor warranty? Material ____ years. Labor warranty? ____years. If no, please explain.

18. How many warranty claims have been filed against the installer within the last 3 years?
None _____ Labor _____ Product _____
19. Are there any judgments, claims, or arbitration proceedings or suits pending against the installer? Yes _____ No _____. If yes, please explain.
20. Has the installer ever failed to complete any portion of any assigned or contracted work?
Yes ___ No ___ If yes, please explain.
21. Does the installer have verifiable means to provide necessary funds to honor warranty requirements? Yes _____ No _____. Please submit proof.
22. Has the installer ever filed for protection under either Chapter 7 or 11 of the US Bankruptcy Laws within last 5 years under this name or any other name? Yes _____ No _____. If yes, please explain
23. Does the installer have a current and active open line of credit with the product/system/material manufacturer (A distributor is not acceptable). Yes _____ No _____. If no, please explain. If the manufacturer does not sell directly to installers, where will the product/system/material manufacturer be purchased?

Sales/Marketing Information

1. How long has this substitute been on the market? _____ years.
2. Did this substitute replace a previous product? Yes _____ No _____. If yes, why.
3. Is the substitute an improvement of a previous product? Yes _____ No _____. If yes, what is the improvement.
4. What was the annual sales volume of this substitute last year?
5. How much more or less is this than the previous year's volume? More _____ Less _____
6. In sales volume of this product, where does the manufacturer rank compared to other manufacturers of the same product? Top 5 10, 15, 20 of _____ manufacturers.
7. How long has the substitute been marketed locally (within 75 miles) to the project? _____ years. List 3 local installations of comparable type, size, and scope where substitute has been successfully used and has been in place and in use for a minimum of 3 years:
 - a.
 - b.
 - c.
8. If the product has not been installed locally (within 75 miles), why do you think that is so?

9. If substitute has been marketed elsewhere, but not locally to the project, why?

10. Is substitute listed in SWEETS Catalogs? Yes ___ No ___ If no why?

11. Is product listed in AIA Masterspec? Yes ___ No ___ If no, why?

12. Has this same substitute been marketed under a different name or by a different manufacturer? Yes ___ No ___ If so, please state details

Manufacturer/Fabricator Information

1. How long has the manufacture been in business? _____ years.

2. How long has the manufacturer been operating under the present name? _____ years.

3. Has the manufacturer operated under any other name? Yes ___ No ___ If so, what name?

4. What other products does the manufacturer produce?

5. Has the manufacture, supplier, or contractor ever failed to complete any portion of any assigned or contracted work? Yes ___ No ___ If yes, please explain.

6. Does the substitute manufacturer meet all of the specified qualifications and requirements?
Yes: ___ No: ___. If no, please describe the differences.

7. When specified, will the installers be certified and factory-trained by the manufacturer? Yes ___ No ___ Not Applicable _____. If no, please explain.

8. Does the manufacturer presently meet all specified qualifying criteria. Yes ___ No _____. If no, please explain.

9. Does the manufacturer comply with the special warranty provisions, when they are specified.
Yes ___ No ___ Not Applicable _____. If no, please explain.

10. Will the installer meet all specified qualifying criteria. Yes ___ No _____. If no, please explain.

Warranty Information

1. Does substitute manufacturer provide a warranty? Yes: _____ No: _____.

2. If no, why not?

3. If yes, are the warranty provisions equal to or better than those of the specified product, including the exclusions? Yes: _____ No: _____.

4. What provisions or exclusions does the substitute manufacturer's warranty have that are not in the specified warranty?

5. If the manufacturer's warranty period exceeds the time the manufacturer has been in business or the time the product has been available or marketed, how was the warranty time determined? Please be specific.
6. How many warranty claims have been filed against this product in the last 5 years? If product is less than 5 years old, then how many claims since the product was introduced? 0 ___ 1-5 ___ 6-10 ___ Over 10 ___.
7. Are there outstanding warranty claims against this product now? Yes: ___ No: ___. If yes, what is the longest period? ___ months. What is its disposition.
8. If there has been warranty a claim, what was the basis of the claim?
9. If there was more than one claim, were the claims for the same reason? Yes: ___ No: ___. If yes, what is the reason? If claim is related to a design or manufacturing problem, has the problem been corrected?
10. Does warranty require Owner's signature for proper execution? Yes ___ No ___. If yes, Can it be revised to exclude Owner's signature? Yes ___ No ___.
If the warranty cannot be revised, will the manufacturer issue a certified letter stating that the Owner's signature does not deprive the Owner of other rights, including, but not limited to, provisions under the Uniform Commercial Code and the Magnusson Moss Act. Yes ___ No ___.
11. Is the warranty pro-rated? Yes ___ No ___.
12. Are there any judgments, claims, or arbitration proceedings or suits pending against the substitute entity? Yes ___ No ___. If yes, please explain.

Foreign Manufacturer

1. Is the manufacturer of proposed item foreign owned? Yes: ___ No: ___
2. Is proposed item manufactured or assembled outside of the United States? Yes: ___ No: ___. If yes, what percentage? ___ percent.
3. Is proposed item manufactured or assembled from components or materials manufactured or assembled outside of the United States? Yes: ___ No: ___. If Yes, what portion of the components or materials are manufactured or assembled outside the United States? ___ percent
4. Do you certify that the substitute product complies with the "Made In America" provisions stipulated elsewhere in the Contract Documents? Yes ___ No ___

Acknowledgements

1. Will the undersigned will pay for costs resulting in changes to the building design, including architectural and engineering design, detailing, and construction costs caused by incorporating the requested substitution or costs associated with any delays caused by deliveries of the substitute? Yes ___ No _____. If no, please explain.
2. If it is determined that a substitute does not fully comply with the Contract Documents after the substitute has been accepted or installed, will the undersigned assume responsibility for all applicable costs, including removal and installation of non-conforming products, to provide one of the specified products that does comply with the specifications. Yes ___ No _____. If no, please explain.
3. Is it understood and agreed to that final and ultimate approval of the substitute shall be determined at final completion of the project. Failure to provide equivalent substitutes in appearance, function, and performance to that specified, may result in the removal of the substitute and the installation of approved product at contractor's expense. Yes _____ No _____. If no, please explain.

Enclosed Attachments:

- 1.
- 2.
- 3.
- 4.

Certification Of Performance And Assumption Of Liability

As a manufacturer or representative of the proposed substitution, it is presumed that you are the most knowledgeable of the proposed substitution. By signing this request, you certify that all information provided in this request is accurate and true. Additionally, you certify that the product, material, component, or service being submitted as a substitute for that specified meets or exceeds the performance, function, and appearance criteria listed in the specifications and in the manufacturer's published literature, and that all information provided in this Request For Substitute, including other applicable Parts, is true and accurate. The Signee also agrees to assume all liability for the ultimate performance, function, and appearance criteria of the submitted substitute.

Person Making Request:

Name:

Signature:

Company:

Address:

Telephone No.:

Fax No.:

Approved substitutes and manufacturers will be released by Addendum as described in the Instructions To Bidders

For Architect's Use

Approved: ____ Approved As Noted: ____
Disapproved: ____ Because ____
Received Too Late: ____
Incomplete Form: ____
Insufficient/Improper Supporting Data: ____
Does Not Meet Specifications: ____

PART 6 (Complete For Paint Substitutes)

1. Provide the following additional supporting information if this request is for a paint manufacturer.

- a. Does the paint manufacturer have products and paint systems listed with the Master Painters Institute at the time of invitation or advertisement for bids for this project? Yes ____
No ____
- b. Can the paint manufacturer provide published complete product performance data sheets for the specified products. These sheets shall be available at the time of invitation or advertisement for bids for this project? Yes ____ No ____ If no, how can performance criteria be compared?
- c. Does the paint manufacturer have the production volume capacity to develop, produce and deliver the volume of paint and coatings required for this project within the required lead times to meet delivery dates without delaying the project? Yes ____ No ____
- d. Is the paint manufacturer actively engaged in researching and developing its own paint and coating formulations? Yes ____ No ____ If no, why not? How is new technology incorporated?
- e. Does the paint manufacturer specialize in manufacturing paint and protective coatings of the type specified for this project? Yes ____ No ____
If no, will the paint manufacturer actually produce the required products? Yes ____ No ____
- f. Does the paint manufacturer employ a fully trained and experienced technical staff capable of providing necessary field support to investigate problems regarding surface preparation, application, and performance of supplied paints and coatings? Yes ____ No ____

g. Does technical staff shall have their own diagnostic equipment including dry film thickness gauges and adhesion gauges, etc. Yes____ No____

If yes, where is the technical specialist located, list the diagnostic equipment that is readily available and the experience in its use.

Technical Specialist:

Diagnostic Equipment:

If no, how are paint systems checked?

No_____.

ASBESTOS FREE CERTIFICATION
USC Aiken H&SS Bldg Elevator Replacement
University of South Carolina Aiken
Aiken, South Carolina

This is to certify that the material furnished and/or installed by the undersigned subcontractor/vendor during the project, further described by McMillan Pazdan Architects Drawings and Specifications, contain no asbestos fibers.

Subcontractor/Vendor _____

Trade/Material Supplied: _____

Date: _____

Certified by: _____

Title: _____

MOISTURE CONTROL CERTIFICATION

For

USC Aiken H&SS Bldg Elevator Replacement University of South Carolina Aiken Aiken, South Carolina

This is to certify that the below listed Contractor has read, understands, and has complied with the following requirements described in this Project Manual:

1. Using the Owner's HVAC system during construction, if permitted, as described in Division 1 General Requirements.
2. A Moisture Control Meeting was conducted in accordance with Division 1 Specification – Project Meetings and responsible entities reviewed all applicable drawings, details, shop drawings, and manufacturer's data for conflicts, compatibility, and coordination problems during installation. Discussion topics included, but were not limited to, the following:
 1. Reviewing installation details
 2. Delivery problems
 3. Keeping materials dry
 - a. Methods
 - b. Definition of wet materials
 - c. Disposition of wet materials
 - d. Wet materials are to be removed and not installed
 8. Acclimatizing the building
 9. Installing carpentry, woodwork and casework
 10. Installing wood, drywall, insulation, and painting
3. Provide the following information regarding the Moisture Control Meeting. This form is not complete without the requested information:
 - Meeting Date:
 - Meeting Location:
 - Meeting Moderator or Coordinator:
 - List of Attendees
 - Meeting Minutes

The Contractor further certifies that

1. All sub-contractors, including all tiers of sub-contractors and all suppliers were given copies of these requirements.
2. All construction disciplines, trades, and entities complied with all moisture control and intrusion provisions stipulated, implied, or inferred in the Contract Documents.

USC Aiken H&SS Bldg Elevator Replacement
University of South Carolina Aiken
Aiken, South Carolina
Project No. H29-9547

MPS Project No. 011077.00

General Contractor: _____

Address: _____

Contractor's License Number: _____

By: _____

Title: _____

Date: _____

Phone Number: _____

Submit this executed Moisture Control Certification at Substantial Completion. Application for final payment will not be processed without this completed and signed form.

CONSTRUCTION CHANGE ORDER

Change Order No.:	
--------------------------	--

Agency: _____

Project Number: _____

Project Name: _____

Contractor: _____

Contract Dated: _____

For: _____

This Contract is changed as follows: *(Insert description of change in space provided below)*

Adjustments in the Contract Sum:

1. Original Contract Sum: -----		
2. Change in Contract Sum by previously approved Change Orders: -----		
3. Contract Sum prior to this Change Order: -----		\$0.00
4. Amount of this Change Order: -----		
5. New Contract Sum, including this Change Order: -----		\$0.00

Adjustments in Contract Time:

1. Original Substantial Completion Date: -----	
2. Sum of previously approved increases and decreases: -----	Days
3. Changes in Days for this Change Order: -----	Days
4. New Substantial Completion Date: -----	

Contractor Acceptance:

BY: _____ Date: _____

(Signature of Representative)

Print Name: _____

Architect Recommendation for Acceptance:

BY: _____ Date: _____

(Signature of Representative)

Print Name: _____

Agency Acceptance and Certification

BY: _____ Date: _____

(Signature of Representative)

Print Name: _____

Change is within Agency Construction Procurement Certification amount of _____

Change is not within Agency Construction Procurement Certification amount _____

Office of the State Engineer Authorization for change not within Agency Construction Procurement Certification:

Signature of OSE Project Manager: _____

Date: _____

SE – 350 Questionnaire for Contractors

Pursuant to Section 11-35-1810 of the SC Code of Laws, as amended

Bidder Notification

This document is included as reference only. The college may elect as an option, with this project, to have the contractor that is the lowest responsive bidder complete and submit this form and its related documents in order to evaluate the contents as part of the determination phase of responsible bidder prior to issuing the notice of intent to award. An original copy of this document is available for complete content review by the bidder at the following location:

**University of South Carolina
Planning & Construction
743 Greene Street
Columbia, SC 29208**

During the following hours:

Monday thru Thursday - 8:00 AM to 4:00 PM

Friday – 8:00 AM to noon

Phone – (864) 250-8174

Technical Specifications

SECTION 01 10 02 - SUMMARY OF WORK

Project Description:

The overall project consists of modernizing the existing elevator at the Humanities & Social Sciences Building at the University of South Carolina Aiken in Aiken, South Carolina. Systems include, but are not limited to, the following:

Selective Demolition: Extensive limited selective demolition of portions of existing structure, cutting and patching to allow for elevator modernizing.

Finishes Systems: Painting new hollow metal door frames.

Elevator Modernization: As described in the Elevator Report and Contract Documents.

Electrical System: As required for the elevator modernizing

Lighting: As required for the elevator modernizing

Confine operations to areas within Contract Limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.

Keep driveway and entrances clear at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize requirements for storage of materials.

END OF SECTION 01 10 02

SECTION 01 14 00 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
1. Contractor's use of the premises.
 2. Owner's occupancy requirements.
 3. Background checks.
 4. Substance abuse.
 5. Identification.
 6. Record keeping for Work requirements.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.3 DEFINITIONS

- A. Subcontractor: A contractor, consultant, individual, or other entity that has its contract directly with the (primary) Contractor. Subcontractors are responsible for the implementation of the safety, health, and environmental requirements of this program for the Work to be done by their own employees as well as work done by their subcontractors. For the purposes of this program, a contractor may be either a subcontractor or sub-subcontractor or consultant.
- B. Sub-subcontractor: A contractor, sub-contractor, consultant, individual, or other entity working for a subcontractor (has other contractors under contract to perform Work on the site of this Project). They shall also be responsible for all provisions specified in this program.
- C. Owner: Defined in AIA Document A201 General Conditions of the Contract For Construction, 2007.
- D. Contractor: Defined in AIA Document A201 General Conditions of the Contract For Construction, 2007.

1.4 USE OF PREMISES

- A. General: Contractor shall have full use of premises for construction operations, including use of Project site, during construction period. Contractor's use of premises is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

- B. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.
- C. Use of Site: Limit use of premises to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways and Entrances: Keep driveway and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles. Do not use these areas for parking or storage of materials
 - a. Coordinate with Owner and schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.5 WORK RESTRICTIONS

- A. The primary use of the facility is for the instructional programming. During scheduled and unscheduled instruction and testing, pursue quiet operations that do not disturb those operations. During periods of scheduled testing, there may be days of required quiet operations. Coordinate these times with the Owner. No claims for delay will be considered for days of quiet operation during periods of testing. The following is the class schedule. Please arrange work schedule so as to not disrupt or interfere with instructional programming and testing:
 - 1. Christmas Holiday Work: The college will be closed for from December 13, 2012 to December 31, 2012. Schedule and coordinate so that majority of work is completed while the school is closed.
 - 2. Evening and Weekend Work: Evening and weekend work is permissible; however, coordinate these activities with the Owner to ensure minimum disruption.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than 2 days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Owner's written permission.
- C. Nonsmoking Building: The use of tobacco products is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor air intakes. Further requirements are below, under "Substance Abuse".

1.6 CONTRACTOR CONTACT WITH STUDENTS AND STAFF

- A. If work needs to be performed after Owner occupancy, Individuals working on site, employed by Contractor, Sub-Contractor, or supplier shall be prohibited from having contact with students and staff.

1.7 BACKGROUND CHECKS

- A. Conduct criminal background investigations of individuals working on Owner's property.
- B. As a minimum, obtain a complete South Carolina statewide criminal background investigation, covering a period for the last 7 years, for individuals and employees performing Work or services for entities such as subcontractors, sub-sub-contractors, and consultants who will perform Work or a service on this Project. In the event that the individual being investigated is from out of state, broaden the investigation to include their home state, as well as the state of South Carolina as outlined above. Obtain information from a company recognized by local law enforcement agency as qualified to do so. Costs associated with these criminal background checks are the responsibility of the Contractor.
- C. The Contractor shall be responsible and liable for the conduct and actions of its employees and individuals working under it.
- D. An individual with the following criminal convictions or pending charges will not be permitted on Owner's Project or property.
 - 1. Rape
 - 2. Child Molestation or Abuse
 - 3. Sexually Oriented Crime
 - 4. Drugs: Felony use, possession or distribution.
- D. An individual with a prior conviction or pending charges contained in the aforementioned list shall not be permitted on the Project Site or the Owner's property.
- E. The Owner may, at any time, request verification of criminal background investigation for an employee or subcontractor on Owner's property.

1.8 SUBSTANCE ABUSE

- A. The use of tobacco products inside Owner's buildings is prohibited. Workers will be asked to leave the site for the balance of the day on their first offense. Workers will be asked to permanently leave the site after the second offense. Set up a designated smoking area away from the building and out of line of sight of students.
 - 1. Remind employees that remaining "drug/alcohol-free" is a condition of employment for this Project. Alcohol and illegal drug use pose a serious threat to workplace safety and health.
 - 2. Implement and enforce a Drug and Alcohol Free Workplace Substance Abuse Program for personnel on this Project. This includes, but is not limited to, educating employees on the Project on the requirements of the Drug Free Workplace Program for this Project. Maintain copies of this program on site for review by the Owner.
 - 3. As a minimum, the program shall include the following:
 - a. The use, possession, sale, transfer, acceptance, or purchase of illegal drugs and controlled substances is prohibited except prescription medications, legally

prescribed by a physician. The use, possession of an open container, personal sale, transfer or acceptance of alcohol on the construction Project property or while performing business is strictly prohibited. Violation of this policy will be grounds for immediate termination and may result in a report to the appropriate law enforcement authorities.

- b. Prescription drugs shall not be used by any person other than the individual to whom it is prescribed. Such substances or non-prescription (over-the-counter) drugs shall be used only as prescribed or indicated. Employees shall be removed from the Project if the side effects of prescription drugs adversely affect the safe completion of their Work activity. Encourage employees to discuss with their supervisor and physician effects of medication that could adversely affect their safety or the safety of others on the Project.
- c. Employees of Contractors may be tested for substance abuse when involved in an incident that results in injury to them or cause injury to another employee or damage to property. A decision to test an individual for substance abuse following an incident will be based on an objective evaluation of observable signs of substance abuse regarding an individual's behavior, appearance, speech or body odor. This decision will be made by or in conjunction with a medical professional or other individual with the knowledge to recognize the signs of substance abuse.
- d. Employees who fail a drug or alcohol test shall not be allowed to Work on this Project or enter the Owner's property for 60 days.
- e. Implement a drug-free work place program.

B. Contractor Employee Testing Requirements

- 1. Construction entities are responsible for pre-employment drug testing of employees hired after they are awarded a contract. File an affidavit that pre-employment drug testing has been done per the minimum requirements below. The affidavit must indicate the name of the employee and be signed by an official of the Contractor.
 - a. Minimum pre-employment drug testing requirements: Personnel hired subsequent to the Contractor being awarded a contract must have verification of successfully passing a pre-employment drug test within thirty calendar days of being allowed on site. (Note the term "Contractor" here refers to both the Contractor and Sub-Subcontractors).
 - b. The drug screening protocol must be at least a 5-panel screen, per NIDA specifications. An initial positive test must be confirmed by a second test using gas chromatography and mass spectrometry (GCMS) methodology or some other method determined by the SC Department of Health and Human Services to be just as reliable.
 - c. The protocols for specimen collection, the specimen custody of control, and the analysis techniques must be acceptable to the Project Safety Director.
 - d. The cost associated with pre-employment and post-accident drug testing shall be the responsibility of the Contractor. The Contractor may arrange local testing with nearest medical facility, mobile testing van, or other recognized testing means that apply.
 - e. Employees must be drug and alcohol free prior to commencing work on the job-site. This includes employees who may only be on site for one day; the only

exceptions are the Owner's personnel, employees of governmental regulatory agencies, escorted visitors (an escorted visitor is a person with no job responsibilities who is anticipated to be on the job-site for less than three hours and who is accompanied by authorized job-site personnel), or Owner's consultants, vendors, material-men, waste haulers, suppliers (or their drivers including while engaged in unloading).

2. Post Incident / Post Accident Testing: Implement a post incident / post accident substance abuse testing program on this Project; testing is triggered by any of the following significant incidents:
 - a. Incident with the potential for, or actual property damage or death as a result of the operation of equipment,
 - b. Employee injured in an accident that requires medical treatment other than first-aid,
 - c. When an employee's actions have contributed substantially in an accident,
 - d. Near accident to another employee or the public, or
 - e. Accident resulting in an OSHA-recordable injury or illness, or property damage.
 - f. The cost associated with post accident testing shall be the responsibility of the Contractor employing this person.

3. Reasonable Suspicion Testing:
 - a. Person on the site suspected of being under the influence of controlled substances is subject to reasonable suspicion testing.
 - b. Reasonable Suspicion is determined by specific observations concerning the employee's appearance, inappropriate behavior, speech, body odor or performance problems or where there is other evidence to support the suspicion.
 - c. Observations for controlled substances testing purposes may include indications of chronic or withdrawal effects of such substances.
 - d. Necessary observation to trigger reasonable suspicion testing will be made only by a trained supervisor [contractor management]. Under no circumstances will the same supervisor be involved in the testing process.
 - e. Determination of "Reasonable Suspicion" can only be made by an individual qualified to identify reasonable suspicion as related to substance abuse.
 - f. Contractor's Drug and Alcohol Free Workplace Substance Abuse Program shall include a provision that requires an employee to submit to a test if there is reasonable suspicion or belief that he/she is using drugs or alcohol that may be impairing his/her safe job performance.
 - g. Cost associated with the implementation of a Reasonable Suspicion Test shall be the responsibility of the Contractor employing this employee.

4. Random: The Substance Abuse program must include a provision for random sampling of persons employed by contractors and subcontractors. Positive test results must be provided in writing to the Project in writing to the Project Safety Director.

C. Employee Training

1. Train new and existing employees in the requirements of the substance abuse program/policy and periodically retrain to ensure compliance. Document this training.

1.9 IDENTIFICATION

A. Contractor Employee Identification:

1. Provide a picture identification badge for each employee who successfully passes a background check and substance abuse test and who will be working on this Project. These identification badges shall be worn in plain view while on the Project site or Owner's property. Employees without a proper identification badge will be escorted off the Project site or Owner's property. Costs of providing identification badges shall be the responsibility of the Contractor. As a minimum, the identification badges shall be computer produced and consist of the following information in a large, easily visible and legible font:
 - a. Full Name
 - b. Nickname
 - c. Current color photo
 - d. Name of Employer
 - e. Date of issue

B. Guest/Visitor Identification:

1. Identification Badges: Provide numbered temporary identification badges for authorized and approved visitors and guests. On arrival, give the guest or visitor a badge to be worn in plain view while on the Project site or Owner's property. Persons without a proper identification badge will be escorted off the Project site or Owner's property. Costs of providing these identification badges shall be the responsibility of the Contractor. As a minimum, the identification badges shall be computer produced and consist of the following information:
 - a. Guest/Visitor
 - b. Badge number
 - c. Contractor's name
 - d. Project name
 - e. Date produced
2. Guest/Visitor Log: Maintain a daily guest/visitor log that shall contain an entry for each non-employee who enters the site. Do not permit guest/visitors to enter the Project site or Owner's property without providing the information requested in the log. As a minimum, record the following information for each log entry:
 - a. Entry number
 - b. Date of arrival
 - c. Time of arrival
 - d. Badge number
 - e. Guest/visitor's full name
 - f. Employer's name

- g. Vehicle description
- h. Vehicle license number
- i. Reason for visit

1.10 RECORD KEEPING

- A. In addition to other documentation required to be maintained at the jobsite by the Contract Documents, maintain a master or central file for documentation related to substance abuse program for sub-contractors, sub-sub-contractors, consultants, and visitors, on the jobsite. Maintain files in such a manner that distinguishes each contractor and their sub-contractors, sub-sub-contractors, consultants, and visitors from other contractors and their subcontractors.
- B. Maintain the following documentation in the safety files:
 - 1. Results of drug testing.
 - 2. Results of background tests.
 - 3. Visitor log, showing date and time of arrival and departure, and purpose of visit.
- C. The Owner and its designated Representatives shall have the right to review documentation at any time upon request. Cooperate with these reviews.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 14 00

SECTION 01 25 00 – SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. AIA A701 Instructions To Bidders
 - 2. Division 01 Section "Submittal Procedures" specifies requirements for submitting the Contractor's construction schedule and the Submittal Schedule.
 - 3. Division 01 Section "Product Requirements" specifies requirements governing the Contractor's selection of products and product options.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for handling substitution requests, that do to extenuating circumstances as determined collectively by the Owner and the Architect, require a substitution to be made after award of the Contract. Examples of extenuating circumstances include, specified product is no longer manufactured or available, change in Project scope or design renders the specified product unusable. Failure to account for adequate ordering lead time does not constitute extenuating circumstances.
 - 1. Submittals shall comply with provisions and requirements of the Instructions To Bidders.
 - 2. Substituting products and manufacturers after Contract Execution is allowed when extenuating circumstances arise that require consideration of requesting substitutes for specified products.
 - 3. Substitute product shall be consistent with, comply with and meet the intent of the Contract Documents and shall not increase Contract sum or Contract time.

1.3 DEFINITIONS

- A. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor. The following are not considered to be requests for substitutions:

1. Substitutions requested during the bidding period, and accepted by Addendum prior to award of the Contract, are included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
2. Revisions to the Contract Documents requested by the Owner or Architect.
3. Specified options of products and construction methods included in the Contract Documents.
4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

- A. Substitution Request Submittal: Submit 3 copies of request for consideration, using the Substitution Request Form in Division 00 of Project Manual.
1. Timing: The Architect will consider requests for substitution after commencement of the Work provided the request comply with requirements specified elsewhere in this Project Manual.
 2. Performance Criteria: Meet or exceed the minimum performance criteria called for in the Specifications and those published by the manufacturer of the specified item even if they are not specifically mentioned in the Specifications. Submittals not complying with this provision will be considered incomplete, unacceptable, and will not be reviewed.
 3. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Identify the product or the fabrication or installation method to be replaced. Include related Specification Section and Drawing numbers.
 - b. Statement indicating why specified material or product cannot be provided.
 - c. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, necessary to accommodate proposed substitution.
 - e. Product data: Manufacturer's published description, capabilities, operating and performance parameters, options, accessories.
 - f. Performance Criteria: Detailed comparison of significant qualities of proposed substitute with those of the Work specified. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated. Prepare supporting data in tabular form showing the submitted criteria next to the each specified performance criteria.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

- 1) Reports shall be based on same tests and standards and with the values and results in the same units of measure as those shown for the specified item.
 - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - i. Samples, where applicable or requested.
 - j. Cost information, including a proposal of the net change, if any in the Contract Sum.
 - k. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - l. The Contractor's certification that the proposed substitution conforms to requirements in the Contract Documents and is appropriate for the applications indicated.
 - m. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure to produce indicated results.
4. Products of manufacturers other than those specified may be acceptable, however, manufacturers capable of providing specified products shall not, for convenience of their normal production methods, vary from the specified product.
 5. Architect's Action: If necessary, the Architect will request additional information or documentation for evaluation within one week of receipt of a request for substitution. The Architect will notify the Contractor of acceptance or rejection of the substitution within 2 weeks of receipt of the request, or one week of receipt of additional information or documentation, whichever is later. Acceptance will be in the form of a change order.
 - a. Form of Acceptance: Change Order.
 - b. Use the product specified if the Architect cannot make a decision on the use of a proposed substitute within the time allocated.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Conditions: The Architect will consider the Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, the Architect will return the requests without action except to record noncompliance with these requirements.
 1. The request complies with all of the following conditions:
 - a. Extensive revisions to the Contract Documents are not required.
 - b. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - c. Requested substitution is compatible with other portions of the Work.
 - d. Requested substitution has been coordinated with other portions of the Work.
 - e. Requested substitution provides specified warranty.

- f. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to contractors involved.
 - h. Requested substitution will not adversely affect Contractor's construction schedule.
 - i. The request is timely, fully documented, and properly submitted, and
2. The request complies with one of the following conditions:
- a. The specified product or method of construction cannot be provided within the Contract Time. The Architect will not consider the request if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
 - b. The request is directly related to an "or-equal" clause or similar language in the Contract Documents.
 - c. The requested substitution offers the Owner a substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities the Owner must assume. The Owner's additional responsibilities may include compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner, and similar considerations.
 - d. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 - e. The specified product or method of construction cannot be provided in a manner compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.
 - f. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.
 - g. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
3. The Architect will not consider substitutions for materials not ordered properly or when the ordering was not adjusted for lead time. Where a specified product or material cannot be delivered in time for reasons beyond the control of the Contractor, submit the following with the Request For substitution. Requests without the following information will be denied:
- a. Statement from the supplier that the specified products or materials cannot be provided in sufficient time to be incorporated in to the Work.
 - b. Statement from the supplier as to the normal lead time required for the specified products or materials and that this lead is common knowledge in the industry.
 - c. Statement from the supplier that the specified products or materials were ordered within the normal lead-time. If the specified products or materials were not ordered within the normal lead time, provide a statement from the supplier as to the date the Contractor initially inquired about the specified products or materials, the date the order was placed by the Contractor, and the date the order was received by the supplier.

- B. Final approval of the substitute shall be determined at final completion of the Project. Failure to provide equivalent substitutes in appearance, function, and performance to that specified, may result in removal of the substitute and installation of approved product at Contractor's expense.
- C. Unapproved Products:
 - 1. Product, material, component, or system that is not listed in the Specifications or was not approved by addendum during the Bidding Phase and is installed on this Project without the written approval of the Architect may, at the Architect's discretion, be subject to removal and replacement with a specified product, material, component, or system. Costs, including Project delays, the Architect's expenses, additional testing/inspection, associated with this removal and replacement shall be at the Contractor's expense.
 - 2. Shop drawings: Submitting unapproved products, materials, components, or systems on shop drawings is not an acceptable approval procedure. The Contractor's submittal and the Architect's acceptance of shop drawings, product data, or samples for construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval. Products, materials, components, or systems that were not previously approved by the Architect and are submitted on the shop drawings are also subject to removal at the Contractor's expense even though the shop drawing containing an unapproved product, material, component, or system has been approved by the Architect.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 25 00

SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract Modifications.
- B. Related Sections include the following:
 - 1. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.
 - 2. Division 1 Section "Submittal Procedures" for requirements for the Contractor's construction schedule.
 - 3. Division 1 Section "Payment Procedures" for administrative procedures governing Applications for Payment.
 - 4. Division 1 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after award of the Contract.

1.3 MINOR CHANGES IN THE WORK

- A. Minor changes in the Work are defined as instructions or interpretations that do not affect the Contract Sum or Contract Time.
- B. The Architect will have the authority to issue supplemental instructions authorizing Minor Changes in the Work, and will do so on AIA Document G710, "Architect's Supplemental Instructions".

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: The Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop Work in progress or to execute the proposed change.

2. Within 20 days after receipt of Proposal Request, unless specified otherwise, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require Modifications to the Contract, Contractor may propose changes by submitting a request for a change to the Architect.
 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 4. Include costs of labor and supervision directly attributable to the change.
 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

- C. Proposal Request Form: Use AIA Document G709 for Proposal Requests.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, the Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: The Architect may issue a Construction Change Directive on AIA Document G714, in particular when the Owner and the Contractor disagree on the terms of

a Proposal Request. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. A Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of Work required by the Construction Change Directive.
1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 26 00

SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections include the following:
 - 1. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 2. Division 01 Section "Submittal Procedures" for administrative requirements governing preparation and submittal of Contractor's construction schedule and submittals schedule.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's construction schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with Continuation Sheets.
 - b. Submittals schedule.
 - c. Contractor's construction schedule.
 - d. List of subcontractors.
 - e. List of products.
 - f. List of principal suppliers and fabricators.
 - 2. Submit the Schedule of Values to the Architect at earliest possible date but no later than 7 days before the date scheduled for submittal of initial Applications for Payment.

3. Schedules: Where the Work is separated into phases requiring separately phased payments, provide schedules showing values correlated with each phase of payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 2. Submit draft of AIA Document G703 Continuation Sheets.
 3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value: Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training in the amount of 5 percent of the Contract Sum.
 5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
 6. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
 7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
 8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

- a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: Submit progress payments to Architect by the 25th day of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 1. Entries shall match data on the Schedule of Values and Contractor's construction schedule. Use updated schedules if revisions were made. Submit schedule with Application for Payment, regardless of whether revised or not.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 3. Submit copies of invoices for each item of material/equipment listed in the Application For Payment. If material/equipment is stored off-site, submit certificate of insurance to substantiate that the materials/equipment are stored in a bonded warehouse.
- E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. Each copy shall include waivers of lien and similar attachments.
- F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
 1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit final or full waivers.

3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
 - a. Submit final Applications for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of Values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Products list.
 5. Schedule of unit prices.
 6. Submittals schedule (preliminary if not final).
 7. List of Contractor's staff assignments.
 8. List of Contractor's Subcontractors.
 9. Copies of building permits.
 10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 11. Initial progress report.
 12. Report of preconstruction conference.
 13. Certificates of insurance and insurance policies.
 14. Performance and payment bonds.
 15. Data needed to acquire Owner's insurance.
 16. Initial settlement survey and damage report if required.
- H. Application for Payment at Substantial Completion: After issuance of the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
 5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."

6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Transmittal of required project construction records to Owner.
10. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 29 00

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination Drawings.
 - 2. Administrative and supervisory personnel.
 - 3. Construction progress documentation including Construction Schedules and construction reports.
 - 4. Periodic construction photographs required in other sections.
 - 5. Requests for Information (RFIs).
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.
- C. Related Sections include the following:
 - 1. Division 01 Section "Project Meetings" for submitting and distributing meeting and conference minutes.
 - 2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Division 01 Section "Payment Procedures" for submitting the Schedule of Values.
 - 4. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
 - 5. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.
 - 6. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.
 - 7. Division 02 Section "Selective Demolition" for photographic documentation before selective demolition operations commence.
- D. The Specifications may contain materials, products, equipment, or procedures that are not applicable to this Project. Refer to the Drawings for materials, products, and equipment applicable to this Project. Materials, products, equipment, or procedures that are not shown or indicated on the Drawings or in the Specifications, but would be inferred as being required by a person who is competent and experienced in the applicable trade/s, shall be furnished and installed to ensure a quality, complete and fully functional installation. If there is a question

regarding the applicability of a material, product, equipment, or procedure on the Drawings or in the Specifications, contact the Architect for an Information at least 10 days prior to date of Bid Opening.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Major Area: A story of construction, a separate building, or a similar significant construction element.
- F. Milestone: A key or critical point in time for reference or measurement.
- G. RFI: Request from Contractor seeking information or clarification of the Contract Documents.

1.4 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, which depend on each other for proper installation, connection, and operation.
 - 1. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of components, including mechanical and electrical.
 - 3. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.
 - 4. Make adequate provisions to accommodate items scheduled for later installation.

5. Schedule construction operations in sequence where installation of one part of the Work depends on installation of other components, before or after its own installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the Schedule of Values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.
 9. Project closeout activities.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.5 SUBMITTALS

- A. Submittals schedule: Submit 3 copies of schedule. Arrange the following information in a tabular format:
1. Scheduled date for first submittal.
 2. Specification Section number and title.
 3. Submittal category (action or informational).
 4. Name of subcontractor.
 5. Description of the Work covered.
 6. Scheduled date for Architect's final release or approval.
- B. Preliminary construction schedule: Submit 2 opaque copies.

1. Approval of cost-loaded preliminary construction schedule will not constitute approval of Schedule of Values for cost-loaded activities.
- C. Contractor's construction schedule: Submit 2 opaque copies of initial schedule, large enough to show entire schedule for entire construction period.
 1. Submit an electronic copy of schedule, using Microsoft software, on CD-R, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.
- D. Contractor's Statement of Responsibility: As required in IBC, Section 1706.
- E. Field Condition Reports: Submit 2 copies at time of discovery of differing conditions.
- F. Special Reports: Submit 2 copies at time of unusual event.
- G. Coordination Drawings: Prepare Coordination Drawings for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
 1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate required installation sequences.
 - c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
 2. Sheet Size: At least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
 3. Number of Copies: Submit 1 opaque and 1 electronic pdf copy of each submittal. Architect will return 1 copy.
 - a. Where Coordination Drawings are required for operation and maintenance manuals, mark up and retain 1 returned copy as a Project Record Drawing.
 4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.
- H. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including cell and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current.

1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel required for proper performance of the Work.
 1. Include special personnel required for coordination of operations with other contractors.

1.7 CONSTRUCTION SCHEDULES

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's construction schedule with the Schedule of Values, list of subcontracts, submittals schedule, progress reports, payment requests, and other required schedules and reports.
 1. Secure time commitments for performing critical elements of the Work from parties involved.
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.8 CONSTRUCTION PHOTOGRAPHS

- A. Key Plan: Submit key plan of Project site and building and any surfaces that may be affected or damaged during execution of this Contract along with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same label information as corresponding set of photographs.
- B. Construction Photographs: Submit 2 prints of each photographic view within 7 days of taking photographs.
 1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte prints on single-weight commercial-grade photographic paper, enclosed back to back in clear plastic sleeves that are punched for standard 3-ring binder.
 2. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
 - a. Name of Project.
 - b. Name and address of photographer.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Date photograph was taken if not date stamped by camera.

- f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Unique sequential identifier.
 3. Digital Images: Submit a complete set of digital image electronic files as a Project Record Document on CD-ROM. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.
- C. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

1.9 REQUESTS FOR INFORMATION (RFIs)

- A. Procedure: Immediately on discovery of the need for clarification of the Contract Documents, and if not possible to request information at Project meeting, prepare and submit an RFI in the form specified.
 1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing Information and the following:
 1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of Architect.
 5. RFI number, numbered sequentially.
 6. Specification Section number and title and related paragraphs.
 7. Drawing number and detail references.
 8. Field dimensions and conditions.
 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 10. Contractor's signature.
 11. Attachments: Include drawings, descriptions, measurements, photos, product data, shop drawings, and other information necessary to fully describe items needing Information.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
 12. Software-Generated RFIs: Software-generated form with substantially the same content as AIA Form G716.
 - a. Attachments shall be electronic files in Adobe Acrobat PDF format.
 - b. Identify each page of attachments with the RFI number and sequential page number.

- C. Architect's Action: Architect will review each RFI, determine action required, and return it.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for information of Architect's actions on submittals.
 - f. Incomplete RFIs or RFIs with errors.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- D. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request.
 9. Identification of related Field Order, Work Change Directive, and Proposal Request.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's construction schedule.
 2. Initial Submittal: Submit concurrently with preliminary schedule. Include submittals required during the first 60 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead-time for manufacture or fabrication.
 3. Indicate the following:
 - a. Scheduled date for the first submittal.
 - b. Related Section number.
 - c. Submittal category (shop drawings, product data, or samples).
 - d. Name of the subcontractor.
 - e. Description of the part of the Work covered.
 - f. Scheduled date for resubmittal.
 - g. Scheduled date for the Architect's final release or approval.
 4. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."
- B. Time Frame: Extend schedule from date established for commencement of the Work to date of Final Completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittals schedule.
 4. Startup and Testing Time: Include not less than 15 days for startup and testing.
 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
- D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
 2. Work under More Than One Contract: Include a separate activity for each contract.
 3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
 5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
 6. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.
 7. Area Separations: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
 - a. Structural completion.
 - b. Permanent space enclosure.
 - c. Completion of mechanical installation.
 - d. Completion of electrical installation.
 - e. Substantial Completion.
- E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
- F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall Project schedule.

- G. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules and works with currently available Windows operating system.

2.3 PRELIMINARY CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule within 7 days of date established for commencement of the Work.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's construction schedule within 30 days of date established for commencement of the Work. Base schedule on the Preliminary construction schedule and whatever updating and feedback was received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
 - 1. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

2.5 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 - 1. List of subcontractors at Project site.
 - 2. List of separate contractors at Project site.
 - 3. Approximate count of personnel at Project site.
 - 4. Equipment at Project site.
 - 5. Material deliveries.
 - 6. High and low temperatures and general weather conditions.
 - 7. Accidents.
 - 8. Meetings and significant decisions.
 - 9. Unusual events (refer to special reports).
 - 10. Stoppages, delays, shortages, and losses.
 - 11. Meter readings and similar recordings.
 - 12. Emergency procedures.
 - 13. Orders and requests of authorities having jurisdiction.
 - 14. Change Orders received and implemented.

15. Construction Change Directives received and implemented.
 16. Services connected and disconnected.
 17. Equipment or system tests and startups.
 18. Partial Completions and occupancies.
 19. Substantial Completions authorized.
- B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.
- C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.6 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in uncompressed format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1600 by 1200 pixels.

2.7 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within 1 day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Employ skilled personnel or outside consultant with experience in scheduling and reporting techniques.
- B. Meetings: Individual responsible for scheduling shall attend meetings related to Project progress, alleged delays, and time impact.

- C. Contractor's construction schedule updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
 - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 - 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 - 3. As the Work progresses, indicate Actual Completion percentage for each activity.

- D. Distribution: Distribute copies of approved schedule to Architect, Owner, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
 - 1. Post copies in Project meeting rooms and temporary field offices.
 - 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

3.2 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.

- B. Digital Images:
 - 1. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.
 - 2. Field Office Prints: Retain one set of prints of progress photographs in the field office at Project site, available for reference. Identify photographs same as for those submitted to Architect.
 - 3. Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - a. Date and Time: Include date and time in filename for each image.
 - b. Field Office Images: Maintain one set of images on CD-ROM in the field office at Project site, available for reference. Identify images same as for those submitted to Architect.

- C. Periodic Construction Photographs: Take color, digital photographs, coinciding with construction activities for which photographs are called for. Select vantage points to show particular issues to be documented.

USCA H&SS Elevator Replacement
University of South Carolina Aiken
Aiken, South Carolina
OSE Project No. H29-9542-JM

MPS Project No. 011077.00

END OF SECTION 01 31 00

SECTION 01 31 19 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for project meetings including, but not limited to, the following:
 - 1. Preconstruction conferences.
 - 2. Preinstallation conferences.
 - 3. Moisture coordination meeting.
 - 4. Ceiling coordination meeting.
 - 5. Project meetings, including safety meetings.
- B. Related Sections include the following:
 - 1. Division 01 Section "Project Management & Coordination" for a description of the division of Work among separate contracts and responsibility for coordination activities not in this Section, for preparing and submitting Contractor's construction schedule.
 - 2. Division 01 Section "Submittal Procedures" for procedures for submitting the Contractor's construction schedule.
- C. The following sections specify requirements for a pre-installation conference:
 - 1. Division 08 Section "Door Hardware"
 - 2. Division 09 Section "Painting"

1.3 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to invited attendees.
 - 3. Minutes: Have an experienced note-taker record and type complete and accurate meeting minutes for scheduled and unscheduled meetings that pertain to the Project, regardless of

who called or scheduled the meeting. Record significant discussions and agreements achieved. Organize the minutes of the proceedings in chronological order. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within 72 hours of the meeting.

4. Minutes shall include, but are not limited to the items listed below.
 - a. Convening time, date, and place
 - b. Attendees
 - c. Discussion topics and how initiated
 - d. Action items and person responsible for item
 - e. Key events
 - f. Decisions made and by whom
 - g. Unresolved issues and disposition of those issues

1.4 PRECONSTRUCTION CONFERENCE

- A. Schedule a preconstruction conference before starting construction, at a time convenient to Owner, and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments. Conduct the preconstruction conference in accordance with Table 7.3.1 of Chapter 7 Office of the State Engineer
 1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. Preparation of Record Documents.
 - l. Use of the premises and existing building.
 - m. Work restrictions.
 - n. Owner's occupancy requirements.
 - o. Responsibility for temporary facilities and controls.
 - p. Construction waste management and recycling.
 - q. Parking availability.
 - r. Office, work, and storage areas.

- s. Equipment deliveries and priorities.
 - t. First aid.
 - u. Security.
 - v. Progress cleaning.
 - w. Working hours.
3. Minutes: Record and distribute meeting minutes.

1.5 PREINSTALLATION CONFERENCES

- A. Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. The Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written requirements and recommendations.
 - n. Project Specifications.
 - o. Documentation requirements.
 - p. Warranty requirements.
 - q. Compatibility of materials.
 - r. Acceptability of substrates.
 - s. Temporary facilities and controls.
 - t. Space and access limitations.
 - u. Regulations of authorities having jurisdiction.
 - v. Testing and inspecting requirements.
 - w. Installation procedures.
 - x. Coordination with other work.
 - y. Required performance results.
 - z. Protection of adjacent work.
 - aa. Protection of construction and personnel.

3. Have an experienced person record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
5. Remind the manufacturer's representative of provisions in the Contract Documents that require him/her to inspect not only for compliance with the manufacturer's requirements but also compliance with the Specifications when Specifications are more stringent. Inspection reports shall include deviations from both manufacturer's requirements and the Specifications. Provide the Manufacturer's representative with a copy of the Project Specifications including Addenda.
6. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
7. A sample agenda with discussion topics for a pre-roofing conference is included at the end of this section.

1.6 MOISTURE COORDINATION

- A. Conduct a moisture coordination meeting prior to installing any materials related to moisture intrusion.
 1. Complete the Moisture Certification Form and submit at Substantial Completion. Application For Payment will not be processed without the completed form.
- B. Representatives of the following entities shall be in attendance: Architect, General Contractor, and installers of the HVAC, masonry, windows, waterproofing, damproofing, vapor retarder, and roofing. Representatives of the applicable materials manufacturers are encouraged to attend also. Attendee shall be qualified and authorized to make or suggest changes, modifications, or revisions to installation details.
- C. Prior to convening this meeting, responsible entities shall review all applicable drawings, details, shop drawings, and manufacturer's data for conflicts, compatibility, and coordination problems during installation. Discussion topics include, but are not limited to, the following:
 1. Reviewing installation details
 2. Delivery problems
 3. Keeping materials dry
 - a. Methods
 - b. Definition of wet materials
 - c. Disposition of wet materials
 - d. Wet materials are to be removed and not installed
 - e. Protection of lumber, treated and untreated
 - f. Moisture content of treated lumber, KD to 16 percent
 - g. Project thermometer and location
 - g. Pictures
 4. Installing carpentry, woodwork and casework
 - a. Building in the dry
 - b. Acclimating the building
 - c. All wet work complete
 5. Installing drywall and painting

- a. Building in the dry
- b. Acclimating the building
- c. All wet work complete
6. Installing floor covering
 - a. Testing substrate for moisture
 - b. Relative humidity test
 - c. Calcium chloride test
 - d. Who conducts the test
 - e. Procedures if moistures level are too high

1.6 CEILING COORDINATION MEETING

- A. Conduct a ceiling coordination meeting prior to installing overhead systems and materials.
- B. Attendees: Architect, Contractor, and installers of the HVAC, fire sprinkler, electrical and data distribution, lighting and ceiling systems. Representatives of the applicable materials manufacturers are encouraged to attend also. Attendee shall be qualified and authorized to make or suggest changes, modifications, or revisions to installation details.
- C. Prior to convening this meeting, responsible entities shall review applicable Drawings, details, shop drawings, and manufacturer's data for conflicts, compatibility, and coordination problems during installation. Discussion topics include, but are not limited to, the following:
 1. Reviewing installation details
 2. Location of items in finished ceiling
 3. Height of systems above ceiling
 4. Space conflicts

1.7 SAFETY MEETINGS:

- A. Conduct weekly safety meetings with all sub-Contractors currently and shortly to be working on site. Coordinate dates of meetings with those of progress meetings.
 1. Provide meeting minutes to Owner within 24 hours of meeting.

1.8 PROGRESS MEETINGS:

- A. Conduct progress meetings at monthly (minimum) intervals. Coordinate dates of meetings with preparation of payment requests. Notify the Owner and the Architect of scheduled meeting dates.
 1. Attendees: In addition to representatives of Owner and Architect, each Contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion related to status of Project.
 - a. Contractor's construction schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
 - 21) Safety.
 - 22) Security.
3. Minutes: Record the meeting minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

- B. Coordination Meetings: Conduct Project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner and Architect, each Contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion related to status of Project.
 - a. Combined Contractor's construction schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Schedule Updating: Revise Combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
 - c. Safety Issues.
 - d. Review present and future needs of each contractor present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Change Orders.
 3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

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Aiken, South Carolina
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MPS Project No. 011077.00

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 19

SECTION 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's construction schedule.
 - 2. Daily construction reports.
 - 3. Field condition reports.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of the Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.

1.3 SUBMITTALS

- A. Format for Submittals: One paper copy.
- B. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- C. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
 3. Total Float Report: List of all activities sorted in ascending order of total float.
 4. Earnings Report: Compilation of Contractor's total earnings from commencement of the Work until most recent Application for Payment.
- D. Field Condition Reports: Submit at time of discovery of differing conditions.

1.4 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 1. Secure time commitments for performing critical elements of the Work from entities involved.
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for commencement of the Work to date of final completion.
 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

- B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
 2. Startup and Testing Time: Include not less than 5 days for startup and testing.
 3. Final Acceptance: Indicate completion in advance of date established for Final Acceptance, and allow time for Architect's administrative procedures.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
 2. Work under More Than One Contract: Include a separate activity for each contract.
 3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 4. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Use of premises restrictions.
 - e. Provisions for future construction.
 - f. Seasonal variations.
 - g. Environmental control.
 5. Work Stages: Indicate important stages of construction for each major portion of the Work.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, and final acceptance.
1. Notify Architect and Owner 48 hours prior to planned milestone inspection.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. General: Prepare network diagrams using AON (activity-on-node) format.
- B. CPM Schedule: Prepare Contractor's construction schedule using a time-scaled CPM network analysis diagram for the Work.
1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 60 days after date established for commencement of the Work.

- a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect's approval of the schedule.
 2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 3. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to correlate with Contract Time.
- C. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the start-up network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Preparation and processing of submittals.
 - b. Mobilization and demobilization.
 - c. Purchase of materials.
 - d. Delivery.
 - e. Fabrication.
 - f. Utility interruptions.
 - g. Installation.
 - h. Work by Owner that may affect or be affected by Contractor's activities.
 - i. Testing
 - j. Punch list and final completion.
 - k. Activities occurring following final completion.
 2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
 3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
 4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
 - a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.
- D. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.

- E. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:
1. Contractor or subcontractor and the Work or activity.
 2. Description of activity.
 3. Principal events of activity.
 4. Immediate preceding and succeeding activities.
 5. Early and late start dates.
 6. Early and late finish dates.
 7. Activity duration in workdays.
 8. Total float or slack time.
 9. Average size of workforce.
 10. Dollar value of activity (coordinated with the schedule of values).
- F. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
1. Identification of activities that have changed.
 2. Changes in early and late start dates.
 3. Changes in early and late finish dates.
 4. Changes in activity durations in workdays.
 5. Changes in the critical path.
 6. Changes in total float or slack time.
 7. Changes in the Contract Time.

2.3 REPORTS

- A. Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
 2. List of separate contractors at Project site.
 3. Approximate count of personnel at Project site.
 4. Equipment at Project site.
 5. Material deliveries.
 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 7. Accidents.
 8. Meetings and significant decisions.
 9. Unusual events.
 10. Stoppages, delays, shortages, and losses.
 11. Meter readings and similar recordings.
 12. Emergency procedures.
 13. Orders and requests of authorities having jurisdiction.
 14. Change Orders received and implemented.

15. Construction Change Directives received and implemented.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Final Acceptance authorized.

- B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01 32 00

SECTION 01 33 00 SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Shop drawings larger than standard sizes 8 ½" x 11", 8 ½" x 14" and 11" x 17", shall be submitted in the form of one reproducible set for review. Upon completion of the review, the Designer shall return the reproducible set with clearly identified marks to the Contractor to distribute as necessary.
- C. Submittals Schedule: Submit one copy of schedule within 30 days of Notice to Proceed. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Architect's final release or approval.
- D. Processing Time: Submittals and shop drawings will be provided to the Designer such that related items can be reviewed simultaneously in packages and no more than three (3) shop drawings (large format) or five (5) submittals (small format) are being reviewed at any one time without prior consent of the Designer. In the event that the Contractor fails to provide the submittals at the time indicated on the approved schedule, the Designer shall be required to return the submittal within twenty (20) calendar days of receipt or at an alternate time mutually agreed to by the Designer and the Project Expediter. No extension of the Contract Time will be

authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Submittals shall be returned to the Contractor not later than twenty (20) calendar days from the date of receipt by the Designer for the Contractor's use or for correction and resubmittal as noted by the Designer. When resubmittals are required, the resubmittal shall be returned not later than five (5) calendar days from receipt by the Designer.

E. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information on label for processing and recording action taken:

- a. Project name.
- b. Date.
- c. Name and address of Architect.
- d. Name and address of Contractor.
- e. Name and address of subcontractor.
- f. Name and address of supplier.
- g. Name of manufacturer.
- h. Submittal number or other unique identifier, including revision identifier.

- 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06 10 00.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06 10 00.01.A).

- i. Number and title of appropriate Specification Section.
- j. Drawing number and detail references, as appropriate.
- k. Location(s) where product is to be installed, as appropriate.
- l. Other necessary identification.

F. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

G. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will discard submittals received from sources other than Contractor.

1. Transmittal Form: Use form provided by Architect.

- I. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked "No Exceptions Taken" or "Make Corrections Noted"

- J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

1.3 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

- A. General: At Contractor's written request, copies of requested CAD files will be provided to the General Contractor for Contractor's use in connection with Project. Electronic copies of the requested drawings will be provided to the General Contractor upon receipt of a signed release form. No files will be provided twice.
 - 1. The documents, including those in electronic form, prepared by the Architect or the Architect's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor nor any subcontractor, sub-subcontractor, material or equipment supplier shall own or claim a copyright in the documents prepared by the Architect or the Architect's consultants and unless otherwise indicated the Architect and the Architect's consultant shall be deemed the authors of them and will retain all common law, statutory and other reserved rights, in addition to the copyrights. Copies, including those in electronic form, furnished to the Contractor are for use solely with respect to this Project and shall not be used on other projects for additions to this Project outside the scope of Work. The Contractor, subcontractor, sub-subcontractor, material or equipment suppliers are authorized to use and reproduce applicable portions of the documents appropriate to and for use in the execution of their Work under the Contract Documents.
 - 2. The Contractor, subcontractor, sub-subcontractor, material or equipment supplier shall not submit all for portions of the Contract Documents for Shop Drawings. All Shop Drawings must be prepared specifically for this project by the appropriate Contractor, subcontractor, sub-subcontractor, material or equipment supplier. Documents, including those in electronic form supplied by the Architect or the Architect's consultants may only be used in the preparation of Shop Drawings as background information.
 - 3. Electronic files are not Construction Documents. Significant differences may exist between the electronic files and the Construction Documents. The Architect and the Architect's consultants disclaim and make no representations, or warranties, expressed or implied, as to the merchantability, condition, accuracy, use, fitness for a particular purpose, suitability, durability of the information or the medium in or on which the information is furnished, of the transferred electronic information. The Architect and the Architect's consultants shall not be liable for any damages; use of the electronic files is at the sole risk of the Contractor, Subcontractor, Sub-subcontractor, material or

equipment supplier. The Contractor, Subcontractor, Sub-subcontractor, material or equipment supplier, by use of electronic files, shall not be relieved of their duty to fully comply with the Contract Documents, including without limitation, the need to check, confirm and coordinate their work.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Manufacturer's catalog cuts.
 - e. Wiring diagrams showing factory-installed wiring.
 - f. Printed performance curves.
 - g. Operational range diagrams.
 - h. Compliance with specified referenced standards.
 - i. Testing by recognized testing agency.
 - 4. Number of Copies: Unless indicate otherwise, submit 2 copies in addition to the number required for Contractor's use of each submittal.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data. Architect's CAD files may be used as only as background for shop drawings and after execution of Architect's release form.
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.

- f. Shopwork manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Notation of coordination requirements.
 - j. Notation of dimensions established by field measurement.
 - k. Relationship to adjoining construction clearly indicated.
 - l. Seal and signature of professional engineer if specified.
 - m. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.
 3. Number of Copies: Submit two opaque (bond) copies of each submittal. Architect will return one copy.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of appropriate Specification Section.
 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

- a. Number of Samples: Submit two sets of Samples. Architect will retain one Sample set; remainder will be returned.
- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location.
 - 1. Number of Copies: Submit three copies of product schedule or list, unless otherwise indicated. Architect will return two copies.
- F. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design.

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
 - 1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.
 - 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - 3. Test and Inspection Reports: Comply with requirements specified in Section 01 40 00-Quality Requirements.
- B. Coordination Drawings: Comply with requirements specified in Section 01 31 00 - Project Management and Coordination.
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- F. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

- G. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- J. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- K. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.
- L. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- M. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- N. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- O. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment.
- P. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- Q. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

- R. **Manufacturer's Field Reports:** Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
 - 1. Statement on condition of substrates and their acceptability for installation of product.
 - 2. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.

- S. **Insurance Certificates and Bonds:** Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

- T. **Material Safety Data Sheets (MSDS):** MSDS sheets will be furnished to Owner in a three ring binder with index for materials; do not submit to Architect.
 - 1. Architect will not review submittals that include MSDS and will return them for resubmittal.

2.3 DELEGATED DESIGN

- A. **Performance and Design Criteria:** Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

- B. **Delegated-Design Submittal:** In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
 - 1. No Exception Taken: Indicates the submittal has been reviewed and appears to comply with the Contract Documents. Work as submitted may proceed without further submittal review by Architect.
 - 2. Make Corrections Noted: Indicates the submittal has been reviewed, and with indicated notations appears to comply with the Contract Documents. With the incorporation of the notations, Work submitted may proceed without further submittal review by Architect.
 - 3. Revise and Resubmit: Indicates that submittal is incomplete. Prior to proceeding, complete and correct work must be resubmitted to Architect for further review.
 - 4. Rejected: Submittal is not in compliance with requirements of Contract Documents. Work that complies with Contract Documents must be submitted for review.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.
- F. Submittal requires signature and approval of only the Design professional responsible for the scope of work.

END OF SECTION 01 33 00

SECTION 01 40 00 QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. See Divisions 02 through 49 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.
- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.
- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

- F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

- B. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.5 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirement for specialists shall not supersede building codes and regulations governing the Work.

- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

- I. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 - 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 6. Demolish and remove mockups when directed, unless otherwise indicated.

- J. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 02 through 49.

1.6 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.

5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Contractor shall maintain at the job office a record of all required tests that have been performed, clearly indicating the scope of work inspected and the date of approval or rejection.

1.7 SPECIAL TESTS AND INSPECTIONS

- A. Chapter 1 Inspections: Owner will engage a qualified testing agency to conduct Chapter 1 inspections.
- B. Chapter 1 Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of inspections at Final Acceptance, which includes a list of unresolved deficiencies.

5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
 2. Comply with the Contract Document requirements for Section 01 73 29 - Cutting and Patching.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 50 00 TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Requirements for temporary utilities, support facilities, and security and protection facilities.

1.2 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

- A. Field Offices: Contractor shall provide and maintain a temporary field office with telephone with an answering service. The office shall be large enough for his use.
- B. Storage and Fabrication Sheds: Contractor shall provide sheds or other secured methods as approved by the Owner, sized, furnished, and equipped to accommodate materials and equipment for construction operations.
- C. Owner's toilet facilities will be available for contractor personnel.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Coordinate location of facilities with Owner so they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: The Owner's utilities including water, electricity, lighting, sewerage and drainage, and HVAC, will be available. The Contractor shall maintain these utilities during use and restore them to their condition prior to Contract Execution.
- B. Sanitary Facilities: The Owner's toilets, wash facilities, and drinking water will be available for use of construction personnel.
- C. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel.
 - 1. Provide additional telephone lines for the following:
 - a. Provide a dedicated telephone line for each facsimile machine and computer in each field office.
 - 2. At each telephone, post a list of important telephone numbers including police and fire departments Contractor's home office Architect's office Owner's office Principal subcontractors' field and home offices.
 - 3. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.
- D. Electronic Communication Service: Provide temporary electronic communication service, including electronic mail in field office.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. When suitable or convenient storage facilities are not available from the Owner, provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
 - 2. Maintain support facilities until near Final Acceptance. Remove before Final Acceptance. Personnel remaining after Final Acceptance will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.

- C. Parking: Use Owner designated areas for construction personnel.
- D. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.
- E. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- F. Use of existing and new elevators will be permitted, as long as elevators are cleaned and maintained in a condition acceptable to Owner. At Final Acceptance, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.
 - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- C. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- D. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
- E. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with

NFPA 241. No smoking will be allowed in the buildings after the buildings are closed in weathertight or finishes begin.

1. Prohibit smoking in construction areas.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Final Acceptance. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. At Final Acceptance, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements

3.6 PROTECTION OF WORK PROPERTY AND THE PUBLIC

- A. Contractors shall ensure that neighboring streets, parking lots, and Owner provided staging areas are protected from mud, sand, stone, litter, or debris in any form. All mud collected on vehicle wheels shall be cleaned off before leaving the construction area. Should any mud or debris from the project collect on the streets, it shall be removed immediately to prevent any hazards to vehicular or pedestrian traffic, as well as from entering the storm sewer. The Contractor is prohibited from discharging any waste products from concrete trucks or from concrete coring work or any other unsuitable construction materials or products into the storm sewer system. The Contractor shall have the cost of the clean up of any such unauthorized discharge deducted from the Contractor's application for payment. All streets, parking lots, or Owner provided staging areas adjacent to the project site shall be cleaned of construction related debris, dust, and mud daily. Should the Contractor fail to comply with this requirement,

the Owner reserves the right, with 24-hour prior notice to the Contractor, to clean the adjacent streets, parking lots, or Owner provided staging area. In such case, the cost of the cleaning shall be deducted from the Contractor's application for payment.

END OF SECTION 01 50 00

SECTION 01 60 00 PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for
 - 1. Selection of products for use in Project
 - 2. Product delivery, storage, and handling
 - 3. Manufacturers' standard warranties on products
 - 4. Special warranties
 - 5. Product substitutions
 - 6. Comparable products.

1.2 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.
- D. Through out the specifications, where the titles below introduce lists of products or manufacturers, the following requirements apply to the product and manufacturer selection. When it is desired to use a product or manufacturer other than one that is listed, submit a properly completed Request for Substitute Form for the desired product.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Products: Subject to compliance with requirements, provide one of the products specified or approved equal.
3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified or approved equal.
4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified or approved equal.
5. The listing of less than 3 entities does not restrict the use of the 3 listed. Submittal of alternates that are equal in all respects to those listed is encouraged.

1.3 SUBMITTALS

- A. Substitution Requests: Submit one copy of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified material or product cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - i. Detailed comparison of construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.

- k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
 - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
 - 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Acceptance: Change Order.
 - b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.
 - B. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - C. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Section 01 33 00 - Submittal Procedures.
 - b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.
- 1.4 QUALITY ASSURANCE
- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
 - B. Any product that fails to be approved as a substitute by addendum or is not expressed or listed as an alternate will be interpreted as an offer to design, construct and provide products based on the Contract Documents.
 - C. No asbestos containing materials will be accepted in any new work on the project. Any material specified that does in fact have asbestos shall be called to the Designer's attention ten (10) calendar days prior to the bid date in order that a substitute material may be selected and all contractor's advised by addendum.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions. As a minimum, store materials and components in a clean dry location away from uncured masonry or concrete. Cover components with waterproof paper, tarpaulin or polyethylene sheeting in a manner to permit circulation of air.
1. Stack materials and components in a manner that will prevent bending and avoid significant or permanent damage.
 2. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected. and that each order is complete with proper materials. Note and record back orders back orders and partial shipments.
 3. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 4. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
 5. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.
 6. Store insulation and roofing materials under canvas tarpaulins. Plastic sheet cover is prohibited for these materials.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
 2. Store materials in a manner that will not endanger Project structure.
 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 4. Store cementitious products and materials on elevated platforms.

5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 6. Protect stored products from damage and liquids from freezing.
- D. Out Of Stock Items: Neither the Owner or the Architect will be responsible for the Contractor's failure to allow for adequate lead times to ensure delivery of products, materials, or equipment to prevent installation delays to any and all trades. The Contractor shall be responsible for all ordering, shipping, handling, storage, duty, fee, etc. costs applicable to ordering products, materials, and equipment for on-time installation. Furthermore, if products, materials, or equipment are discontinued or are no longer available at the time they are ordered, the Contractor shall be responsible for all costs incurred by the Architect and the Owner in selecting and approving a substitute and for the cost differential between the originally specified product, material, or equipment and the selected substitute. The Owner and Architect reserve the right to select and approve all substitutes.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
 3. Refer to specification sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 01 77 00 - Closeout Procedures.

PART 2 - PRODUCTS

2.1 SUBSTITUTION PROCEDURES

- A. In making application for substitution, Contractor represents that he has personally investigated the proposed product, and determined that it is equal or superior in all respects to that specified by placing his proper stamp, date, item being substituted for, referenced section of project and drawing sheets applicable and signature on each proposed item. Contractor will further certify that approval of the substitution will not result in any additional cost or time to the owner as a result of coordination of the substituted product with any other trades.
1. Prebid Approvals: Each Contractor shall obtain approval by addendum from the Designer for use of substitute products, materials, or equipment claimed as equal to those specified. This request for approvals shall be as follows:
 - a. Applications shall be made by the Contractor and not by subcontractors or material suppliers.
 - b. Application shall be in the Designer's office no later than ten (10) days prior to the bid opening.
 - c. Each item on the list of request for substitutions of material shall be accompanied by sufficient printed information and/or samples to allow for a fair comparison between the proposed material and material specified.
 - B. The Designer will issue an addendum no less than one hundred twenty (120) hours prior to the bid date listing approved substituted products that may be used in the bid process. No further substitutions will be permitted except in unusual or extenuating circumstances.
 - C. If a manufacturer or supplier cannot or will not provide as specified, the Contractor shall select and use a manufacture/provider from those listed in the specifications and provide as specified at no additional change to the Contract Sum or Contract Time.

2.2 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
- B. Product Selection Procedures:
1. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
 2. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
 3. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system.
 4. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 5. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
 - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
 - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.
- C. Foreign Product Limitations: Except under one or more of the following conditions, provide domestic products, not foreign products, for inclusion in the Work:
1. No available domestic product complies with the Contract Documents.
 2. Domestic products that comply with the Contract Documents are available only at prices or terms substantially higher than foreign products that comply with the Contract Documents.
- D. The Contractor shall fully comply with all provisions of the Contract Documents including providing such entities that include, but are not limited to, the products, materials, equipment, components, or systems that were proposed at the time bids were received. Except for extenuating circumstances as determined by the Architect and OSE, notification of not being able to meet any of the provisions of the Contract Documents will not be considered after receipt of bids; and the Contractor shall fully comply with the Contract Documents at no increase in Contract Sum or Contract Time.

- E. Electrical Provisions: Where electrical components or equipment are specified or are required, provide all transformers, power supplies, switches, controllers, relays, wire, conduit, circuit breakers, junction boxes, transfers, and other electrical devices, components, and materials as required and provided by the specified or required electrical equipment or component manufacturer for a complete and operable system meeting and complying with the specified or required electrical equipment or component manufacturer's warranty requirements. Where such items are not available from the specified or required electrical equipment or component manufacturer, provide such items as recommended by the specified or required electrical equipment or component manufacturer to provide a complete and operable system meeting and complying with the specified or required electrical equipment or component manufacturer's warranty requirements.

PART 3 - EXECUTION (Not Used)

3.1 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Where specifications requirements are more stringent or severe than the manufacturer's requirements, comply with the specifications unless the manufacturer states, in writing, that the specification requirements are detrimental to performance and will void the manufacturer's warranty. Anchor each product securely in place, accurately located and aligned with other Work.
 - 1. All Work is to be performed by and all materials are to be installed by craftsmen that are skilled, trained and experienced in their respective trades.
 - 2. All Work is to be performed to and all materials are to be installed to the highest level of quality and workmanship that meets or exceeds manufacture's instructions and industry standards and shall meet the quality and performance requirements of the Architect. Work not conforming to this requirement shall be removed and replace with conforming work.
 - 3. Where specific manufacturers and product names are not listed, provide materials and products that are the best types and that are best suited for the intended use as indicated in the Contract Documents, and that will provide the maximum longevity with minimum maintenance. Where more than one product can be used in an application, the best product shall be selected and used. Work not conforming to this requirement shall be removed and replace with conforming work.
 - 4. All products and materials shall be installed using the best procedures, techniques and practices recommended or suggested by the respective manufacturers and industry standards. Provide all supplementary materials and products recommended or suggested by the applicable manufactures and industry standards even if the supplementary materials and products are not indicated or specified. Work not conforming to this requirement shall be removed and replace with conforming work.
 - 5. Bring all conflicts within the drawings, within the specifications, and between the drawings and specifications to the Architect's attention. Where such conflicts that were not brought to the Architect's arise, the Architect will interpret and judge for the best interest of the Owner even if the interpretation or judgment is the most expensive or complex of the conflicting issues.

6. Before, during, and after their installation, and until substantial completion, continuously protect all materials, finishes, equipment, assemblies, and subassemblies from weather, deterioration, premature wear, damage, theft, or vandalism.
 7. When installing items, including but not limited to materials, components, assemblies, subassemblies, and systems, ensure that all supports, substrates, and surfaces to receive installed items meet the manufacturer's requirements, and are in a suitable condition, to receive the installed items. Beginning installation shall be inferred as acceptance of existing conditions and that the installer accepts full responsibility for the performance and aesthetics of the completed Work.
 - a. This evaluation includes, but is not limited to, conducting applicable testing to determine the presence and effects of moisture; the soundness, strength, and integrity of substrates so as to prevent separation or delamination, sag, or excess deflection; the compatibility of adjoining, connecting, or contacting materials; proper support of elements and members to prevent sag or excessive deflection. Where bracing or supports are not specifically shown on the Drawings, but are required to achieve, aesthetics, structural requirements, support, etc, applicable members shall be provided and installed.
 8. Where materials, components, assemblies, subassemblies, and systems, co-exist with or are dependent on the proper performance of other materials, components, assemblies, subassemblies, and systems, ensure that all necessary measures are taken to preserve that synergistic relationship.
 9. Clean exposed surfaces to a like-new condition, to the satisfaction of the Architect, and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- B. Fasteners: Unless specified or required otherwise, comply with the following:
1. Use fasteners of the proper type, design, size, and length as recommended by the manufacturers of the components or material being fastened for the intended application.
 2. Fasteners shall provide proper and secure attachment without damaging the components or materials being fastened or the substrate.
 3. Install fasteners in a pattern and density recommended by the applicable manufacturers, referenced agencies, and governing authorities to ensure suitable fastening to meet conditions. Where there is a conflict in recommended fastening, the most severe shall govern.
 4. Fasteners that are used in exterior applications, are exposed to weather or moisture, or are in contact with earth, interior and exterior treated wood, interior and exterior cementitious materials, or dissimilar materials shall be corrosion-proof.
 5. Use fasteners that will not penetrate surfaces that will be exposed to view or that will be finished.
 6. Where fasteners must completely penetrate the substrate to which materials or components are being attached, fasteners shall be of the recommended length so as not to penetrate completely through the substrate more than 3/4 inch, unless the manufacturer recommends otherwise. In no case shall fasteners extend past the bottom of the metal roof deck flutes.

7. After being tightened to the recommended torque, bolts shall be of proper length to penetrate items being fastened and have sufficient thread exposed to accept a flat washer, lock washer and a nut with 3/8 inch of bolt extending past the nut.

3.2 MOISTURE CONTROL

- A. The intent of these specifications is not to state, suggest, or imply that the Architect is a moisture or mold specialist or expert. Instead, the specifications are the minimum directives to the Contractor regarding the handling and installation of materials. Furthermore, these specifications do not relieve the Contractor of any additional or other responsibilities, duties, or procedures, including hiring and paying for applicable specialists or consultants, necessary to ensure that the building is free of mold and or any other conditions that may promote mold or may be interpreted as detrimental to any form of Indoor Air Quality. The Contractor shall be responsible for all coincidental damage related to moisture intrusion or moisture accumulation related to the Contractor's failure to take the necessary precautions and preventive measure to prevent moisture intrusion and accumulation.
- B. Fibrous and cellulose-base materials and products that become wet and are not dried within 24 hours can and usually do initiate and promote the growth of mold and mildew. Saturation of these materials is not necessary to initiate the mold cycle. Preventing and detecting the spread of mold, mildew, other fungi, and their related spores is of paramount importance during construction of this Project and after Owner occupancy. The Contractor shall be ever mindful of how the procedures used to handle, stage, and install materials and products will impact and affect the growth of mold and mildew during construction and after Owner occupancy.
 1. Building materials and products that are prone to absorbing and retaining moisture include, but are not limited to, the following:
 - a. Carpet
 - b. Drapery
 - c. Drywall
 - d. Masonry
 - e. Concrete
 - f. Furniture
 - g. Insulation
 - h. Casework,
 - i. Fiberboard
 - j. Wood floor
 - k. Wood doors
 - l. Fabric items
 - m. Particleboard
 - n. Finish carpentry
 - o. Acoustical ceiling
 - p. Wood finishes and trim
 - q. Cellulose, fibrous, or moisture absorbing materials and products
 - r. Any material or product that may promote, encourage, or sustain mold or mildew growth or the spores of same.

- C. At the time of Contract Execution, submit the following:
1. A signed Moisture Control Certification, which is located in front of this Project Manual.
 2. Complete and detailed procedures that describe the following conditions:
 - a. Manufacturer's certification for any listed materials or products that are normally used in the building shell and for which the manufacturer claims that moisture will not harm the material or product will not promote or support the growth of mold or mildew.
 - b. Identification of moisture and mold on or in any of the listed materials and products, whether being unloaded, staged, or in-place.
 - c. Protection of any of the listed materials and products during staging, handling, and while in place.
 - d. Disposition of materials and products that are wet, show signs of having been wet, or have evidence of mold or mildew on arrive at the site or off-site staging/storage location.
 - d. Removal of materials or products that have been identified as being wet or having signs of mold or mildew.
- D. Methods to prevent mold, mildew, other fungi, and their related spores include, but are not limited to, the following:
1. Comply with the provisions for "Temporary Use Of Owner's HVAC" as stipulated in Division 01 Section - Temporary Facilities and Controls.
 2. Establish and enforce proper and effective construction sequencing throughout the project to protect moisture sensitive products and materials from contamination.
 3. Monitor interior humidity levels and provide proper ventilation during construction to promote drying and curing of concrete, masonry, fireproofing, drywall, etc. and to prevent mold/mildew formation. This is especially critical during humid or wet weather conditions.
 4. Take necessary precautions for moisture conditions/surfaces that may be concealed after constructions.
 5. Immediately dry leaks, spills, or other moisture that has entered the structure or building shell and monitor and regulate, as necessary, water generating activities to prevent mold/mildew contamination.
 6. Be constantly alert for any signs of mold, mildew, and musty odors and take prompt remedial and preventative action at their first sign. Encapsulation is not an acceptable treatment.
 7. Erect the exterior finish (masonry, siding, EIFS, etc.) of the building shell as quickly as possible to protect internal components (sheathing, insulation, blocking, etc.) of building shell. Protect these components until the exterior finish is installed.

8. Use all possible means and methods to prevent moisture intrusion into the structure after any of the listed materials or products have been installed.
9. Any listed material or product that arrives on the job site wet or shows evidence of having been wet shall be considered defective, shall be rejected, and promptly removed from the site.
10. Keep the listed materials and products from direct contact with moisture. Use all necessary means to keep materials dry during staging and after installation. Take all measures to close openings in the building shell after installation of building materials and products. Promptly remove from the site all materials and products that have become wet and have an unacceptable moisture level or that may produce or encourage the growth of mold as determined by an independent testing laboratory that is acceptable to the Owner and Contractor.
11. When materials and products are wrapped, and moisture has condensed on the inside of the wrapping, the materials that are wrapped shall be tested by the independent testing agency. If the agency determines that the materials are wet, those materials shall be removed from the site promptly at the contractor's expense.
12. Do not install any of the listed materials and products until they are completely protected from direct contact with moisture or water.
13. Promptly remove from the site all materials and products, including porous products such as masonry, that show signs of mold, mildew, and musty odors even if already installed. Procedures to only clean surfaces to remove the mold, mildew, and musty odors are not acceptable.
14. Take all measures to prevent scrap and waste materials from being covered or buried in the construction.
15. Prevent moisture accumulation and promote drying by providing air circulation and temperature control during installation of systems that dissipate moisture such as plaster, sprayed fireproofing, concrete, drywall finishing, etc.
16. None of the listed materials or products shall be installed until the building is completely in the dry, and not prior to completing moisture producing operations (concreting, plastering, plastering, sprayed fireproofing, etc. Any of these materials or products that are installed prior to the building being in the dry or completing moisture producing operations shall be promptly removed from the site and replaced with new materials at the contractor's expense.
17. Coordinate construction activities to ensure that the listed materials and products are not exposed to moisture or to conditions that will initiate, promote, or encourage the growth of mold or mildew or that will otherwise be detrimental to the materials and products. Where a manufacturer's requirements for ambient conditions (such as the HVAC

operational and temperature and humidity stabilized at expected operating levels) exceed these requirements, the most stringent shall govern.

18. Keep all HVAC duct covered and sealed when the system is not operating to prevent dust from entering system. Keep air-conditioning ducts free of moisture and condensation pans and lines operational and unclogged. Ensure that other water sources are not draining into condensation pans.
 - a. Keep HVAC filters and ducts clean during construction. Use minimum MERV 8 filters installed at all return air and outside air openings. Install properly sized minimum MERV 8 filters at filter racks just prior to building turn over to Owner. Document Make and model #'s of filtration media and filters.
 - b. Do not operate HVAC when dusty (sawing, sweeping, sanding, etc.) operations are being performed.
 - c. Use air filtration devices (dust collectors) on sanding and sawing equipment.
 - d. Use freestanding air filtration devices.
 - e. Do not operate HVAC when doors and windows are open.
19. Do not conduct any dust-producing activities when the HVAC system is operating. Secure the system and seal all duct openings prior to performing any dust-producing operations.
20. Prior to Substantial Completion, contract with an independent licensed and professional testing agency that specializes in indoor air quality and that is acceptable to the Owner and Architect. The Contractor shall take all recommended and required corrective action to bring all unacceptable areas to an acceptable level, as determined by additional air sampling, at no additional cost to the Owner. This testing agency shall be responsible for, but not limited to the following:
 - a. Sampling air of all spaces and analyzing for mold and mold spores.
 - b. Sending copies of all reports to the Owner, the Architect, and the Contractor. Show actual levels of each space tested and denote all areas that are not within acceptable limits.
 - c. Submitting recommendations to bring unacceptable areas to acceptable levels.
 - d. Acceptable levels/conditions shall be determined by comparing samples of indoor air with samples of background and outside air. The mold content of indoor air samples shall not exceed that of the background and outdoor air samples. Additionally, the indoor air samples shall not contain any traces of mold that would not ordinarily be found in the outside air.

END OF SECTION 01 60 00

SECTION 01 73 00 EXECUTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. General procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 3. General installation of products.
 - 4. Progress cleaning.
 - 5. Starting and adjusting.
 - 6. Protection of installed construction.
 - 7. Correction of the Work.

1.2 SUBMITTALS

- A. Certificates: Submit certificate signed by land surveyor or professional engineer certifying that location and elevation of improvements comply with requirements.
- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
 - 1. Before construction, verify the location and points of connection of utility services.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on CSI Form 13.2A, "Request for Interpretation."

3.3 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.

2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Final Acceptance.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 2. Allow for building movement, including thermal expansion and contraction.
 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints and to comply with standard practice and accommodate movement in building.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
- 3.4 PROGRESS CLEANING
- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.

2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Final Acceptance.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Final Acceptance.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.5 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Section 01 40 00 - Quality Requirements.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Final Acceptance.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.7 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section - Cutting and Patching.
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair. Damaged surfaces that cannot be repaired to the Architects satisfaction shall be replaced with new material at no additional cost.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 73 00

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following:
 - 1. Division 02 Section "Selective Demolition" for demolition of selected portions of the building.
 - 2. Divisions 02 through 14 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

C. SUBMITTALS

- C. Cutting and Patching Proposal: Submit a proposal describing procedures at least 15 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated

and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

B. Certifications: Submit a copy of the following certifications to the Architect and the Environmental Consultant:

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

1. Elements that might otherwise be overlooked as structural elements and that require Architect's approval of a cutting and patching proposal.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety. Operating elements include the following:

1. Primary operational systems and equipment.
2. Air or smoke barriers.
3. Fire-suppression systems.
4. Mechanical systems piping and ducts.
5. Control systems.
6. Communication systems.
7. Conveying systems.
8. Electrical wiring systems.
9. Operating systems of special construction in Division 13 Sections.

C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Exterior curtain-wall construction.
4. Equipment supports.
5. Piping, ductwork, vessels, and equipment.
6. Noise- and vibration-control elements and systems.

- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
1. If possible retain the original Installer or fabricator to cut and patch the exposed Work. If it is impossible to engage the original Installer or fabricator, engage another recognized experienced and specialized firm.
 2. Comply with the recommendations and instructions of the manufacturer of the Work to be cut and patched and of the materials being used for cutting and patching.
 3. Incorporate materials and procedures of a quality not less than used in the original construction, recommended by the manufacture of the Work being cut and patched, and acceptable to the Architect.
 4. Match the finish, profile, and dimensions, and shall not compromise design, function, operation, and performance of the Work that was cut and patched.
 5. Where cutting and patching is necessary on work that is under warranty, cutting and patching shall not compromise, void or reduce the conditions and provisions of warranties or insurance that are in effect.
 6. Where cutting and patching may compromise the conditions and provisions of a warranty or insurance, notify the Architect prior to starting cutting or patching operations.
 7. The Architect reserves the right to accept and approve cutting and patching. Acceptance and approval shall be based on overall aesthetics, performance, function, and operation.
- E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize or prevent interruption to occupied areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay. All cutting and patching shall be by the general contractor.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size

- required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 4. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Replacing Existing Materials, Components, Equipment: Where the Work requires the removal of existing materials, components, and equipment (items) and replacing them with new, the replacement items shall match the finish, appearance, and function of that removed, unless directed otherwise.
1. If there is a conflict with these requirements or there is an uncertainty with these requirements, notify the Architect for interpretation and clarification. Do not order or install replacement materials, components, or equipment without this understanding. There will be no additional compensation in time or money for installed replacement items that do not meet this requirement.
 2. Where a replacement item does not match the existing item, or when installed, the replacement item will leave mounting holes or unfinished surfaces, notify the Architect for interpretation.
 3. When it is necessary to install new items as a replacement for existing items, and the mounting holes and exposed surfaces from the previous items will be exposed, fill the vacant holes and dress smooth, even, and flush with the adjacent surfaces. Finish filled areas and exposed surfaces to match the color and gloss of the existing adjacent surfaces.
 4. Contact the Architect for the disposition of items that are to be removed and replaced with new items.
 5. Where the Work requires the replacement of electrical or electronic items, comply with the requirements of applicable governing authorities. Wire and coax shall be concealed, unless otherwise approved. If exposed wire/coax is approved, run it in metallic

conduit/wire molding finished to match adjacent surfaces. Exterior installations shall be in approved weatherproof conduit.

- E. If roof surfaces are disturbed during execution during execution of this Contract, perform the following procedures and coordination:
1. Coordinate cutting and patching with the roof system manufacturer and ensure that it records the work being done. Describe in detail the work that is proposed.
 2. Coordinate cutting and patching with the applicable discipline (mechanical, electrical, architectural, structural).
 3. Perform cutting and patching with skilled professionals experienced in their respective trades and specializing in the type of roof system being penetrated or disturbed.
 4. Use the same materials produced by the roof system manufacturer.
 5. Do not use materials that will void or diminish the Owner's existing roof warranty.
 6. Frame openings 12 inches and longer in either direction with galvanized steel angle and channel. Refer to Division 05 Section "Metal Fabrications".
 7. Ensure that the roof system is in a watertight condition at the close of each day, when wet conditions are imminent, and if areas where cutting and patching occur will be unattended for longer than one hour.
 8. Arrange for a representative of the existing roof system to examine completed cutting and patching. This representative shall issue a report of the findings, that the cutting and patching comply with the manufacturer's requirements, and that the existing roof warranty shall include the cutting and patching and disturbed areas.

3.4 CLEANING

- A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION 01 73 29

SECTION 01 77 00 CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for contract closeout, including, but not limited to:
1. Inspection procedures.
 2. Warranties.
 3. Final cleaning.

1.2 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Final Completion, complete the following. List items below that are incomplete in request.
1. Submit final Application for Payment.
 2. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 3. Advise Owner of pending insurance changeover requirements.
 4. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 5. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 6. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
 7. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
 8. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 9. Complete startup testing of systems.
 10. Submit test/adjust/balance records.
 11. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 12. Advise Owner of changeover in heat and other utilities.
 13. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 14. Complete final cleaning requirements, including touchup painting.
 15. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

- B. Inspection: Submit a written request for inspection for Final Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Final Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 - 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
 - 1. Submit a final Application for Payment.
 - 2. Submit a certified copy of Certificate of Completion and Certificate of Compliance Inspection.
 - 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4. Submit pest-control final inspection report and warranty.
 - 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

1.5 WARRANTIES

- A. Submit written warranties on request of architect for designated portions of the work where commencement of warranties is Project Acceptance.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations for areas and surfaces affected by Work under this Contract before requesting inspection for certification of Final Inspection for entire Project or for a portion of Project:

- a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - g. Remove debris and surface dust from surfaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - m. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - n. Replace parts subject to unusual operating conditions.
 - o. Clean plumbing fixtures used during execution of this Contract to a sanitary condition, free of stains, including stains resulting from water exposure.
 - p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - q. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
 - r. Leave Project clean and ready for occupancy.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 77 00

SECTION 01 78 23 OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for preparing operation and maintenance manuals, including:
 - 1. Emergency manuals.
 - 2. Operation manuals for systems, subsystems, and equipment.
 - 3. Maintenance manuals for the care and maintenance of products, materials, finishes, systems and equipment.

1.2 SUBMITTALS

- A. Manual: Submit one copy of each manual in final form at least 15 days before final inspection. Architect will return copy with comments within 15 days after final inspection.
 - 1. Correct or modify each manual to comply with Architect's comments. Submit 2 copies of each corrected manual within 10 days of receipt of Architect's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

- A. Coordinate maintenance and operation training materials with Owner.
- B. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain a title page, table of contents, and manual contents.
- C. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name, address, and telephone number of Contractor.
 - 6. Name and address of Architect.
 - 7. Cross-reference to related systems in other operation and maintenance manuals.

- D. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- E. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
 - 1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
 - 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 - 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
 - 4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for type of emergency, emergency instructions, and emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component for fire flood gas leak water leak power failure water outage equipment failure and chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

- D. Emergency Procedures: Include instructions on stopping, shutdown instructions for each type of emergency, operating instructions for conditions outside normal operating limits, and required sequences for electric or electronic systems.

2.3 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and equipment descriptions, operating standards, operating procedures, operating logs, wiring and control diagrams, and license requirements.
- B. Descriptions: Include the following:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Equipment identification with serial number of each component.
 - 4. Equipment function.
 - 5. Operating characteristics.
 - 6. Limiting conditions.
 - 7. Performance curves.
 - 8. Engineering data and tests.
 - 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include start-up, break-in, and control procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; and required sequences for electric or electronic systems.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.4 PRODUCT MAINTENANCE MANUAL

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:

1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and inspection procedures, types of cleaning agents, methods of cleaning, schedule for cleaning and maintenance, and repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including maintenance instructions, drawings and diagrams for maintenance, nomenclature of parts and components, and recommended spare parts for each component part or piece of equipment:
- D. Maintenance Procedures: Include test and inspection instructions, troubleshooting guide, disassembly instructions, and adjusting instructions that detail essential maintenance procedures:
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original Project Record Documents as part of operation and maintenance manuals.
- F. Comply with Section 01 77 00 - Closeout Procedures for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 78 23

SECTION 01 78 36 - WARRANTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers standard warranties on products and special warranties:
 - 1. Refer to the General Conditions for terms of the Contractor's period for correction of the Work.
- B. Related Sections include the following:
 - 1. Division 01 Section "Submittal Procedures" for procedures for submitting warranties.
 - 2. Division 01 Section "Closeout Procedures" for Project closeout.
 - 3. Divisions 02 through 33 for Sections for specific content requirements for warranties and special warranties on products and installations specified to be warranted.
- C. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.
 - 1. Warranties shall begin on the date of substantial completion. If the manufacturer's or provider's warranty begins on the date of shipment or delivery or some other date that precedes the Date of Substantial Completion, provide a gap warranty to extend the warranty period by such a time to ensure that the Owner receives the full warranty period specified in the Contract Document beginning with the Date of Substantial Completion.
 - 2. Warranties shall be written to cover the Owner and shall name the Project location. Warranties written for the benefit of only the original purchaser are not acceptable.
 - 3. Warranties that require the Owner's signature to become affective are not acceptable and will be rejected.

1.3 DEFINITIONS

- A. Standard warranties: Preprinted written warranties published by individual manufacturers for particular products and specifically endorsed by the manufacturer to the Owner.
- B. Special warranties: Warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.
- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to comply with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
 - 1. Warranties shall have provisions to cover the costs for labor, materials, fees, taxes, shipping, handling, equipment and other incidental costs associate with restoring Work to an acceptable condition.
- D. Warranties and their provisions for material, equipment, components, systems, subsystems, or other entities that are covered by a Warranty or that require a Warranty, shall pass directly to and apply directly to the Party whose name appears as the Owner in Contract Documents.
- E. Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies. Written or expressed warranties shall not be in lieu of or void or dilute the Owner's rights provided under the Uniform Commercial Code (UCC).
 - 1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- F. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

1.5 SUBMITTALS

- A. Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.
 - 1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within 15 days of completion of that designated portion of the Work.
- D. When the Contract Documents require the Contractor, or the Contractor and a subcontractor, supplier or manufacturer to execute a special warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner, through the Architect, for approval prior to final execution.
- E. Form of Submittal: At Final Completion, compile 2 copies of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Provide additional copies of each warranty to include in operation and maintenance manuals
- F. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the Contractor
 - 4. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty for inclusion in each required manual.
- G. Cutting and Patching: For areas involving cutting and patching, issue a certification, from the manufacturer of the materials and systems being cut and patched stating that all conditions and provisions of existing warranties and insurance will remain in effect. Where cutting and

patching materials are by manufacturers other than those of the original manufacturer, provide a certification that the materials will not affect the conditions and provisions of existing warranties and insurance.

PART 2 - PRODUCTS not used

PART 3 - EXECUTION not used

END OF SECTION 01 78 36

SECTION 01 78 39 PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for Project Record Documents, including:
 - 1. Record Drawings.
 - 2. Record Specifications.

1.2 SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set(s) of marked-up Record Prints.
 - 2. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal: Submit one set of marked-up Record Prints. Architect will mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Architect will return prints for organizing into sets, and final submittal.
 - b. Final Submittal: Submit one set(s) of marked-up Record Prints.
- B. Record Specifications: Submit two copies of Project's Specifications, including addenda and contract modifications.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
 - 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

2. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Transparencies: Immediately before inspection for Certificate of Final Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.
1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
 2. Refer instances of uncertainty to Architect for resolution.
 3. Architect will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.
 4. Print the Contract Drawings and Shop Drawings for use as Record Transparencies. Architect will make the Contract Drawings available to Contractor's print shop.
 - a.
- C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
 - 3.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

2.3 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Provide two hard copies and copy on CD of complete sets of Designer approved shop drawings and operation and maintenance manuals shall be furnished to the Owner no later than fourteen (14) calendar days prior to final acceptance of the project by the Owner.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.
- C. Final payment will not be made until "As-Built Drawings" are turned over to the Designer and approved in writing by the Designer.

END OF SECTION 01 78 39

SECTION 01 79 00 DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.

1.2 SUBMITTALS

- A. Instruction Program: Submit two copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1.3 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 01 Section –Quality Requirements, experienced in operation and maintenance procedures and training.
- C. Preinstruction Conference: Conduct conference at Project site. Review methods and procedures related to demonstration and training.
- D. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include system and equipment descriptions, operating standards, regulatory requirements, equipment function, operating characteristics, limiting conditions, and performance curves.
 - 2. Documentation: Review emergency, operations, and maintenance manuals; Project Record Documents; identification systems; warranties and bonds; and maintenance service agreements.
 - 3. Emergencies: Include instructions on stopping; shutdown instructions; operating instructions for conditions outside normal operating limits; instructions on meaning of warnings, trouble indications, and error messages; and required sequences for electric or electronic systems.
 - 4. Operations: Include startup, break-in, control, and safety procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; operating procedures for emergencies and equipment failure; and required sequences for electric or electronic systems.
 - 5. Adjustments: Include alignments and checking, noise, vibration, economy, and efficiency adjustments.
 - 6. Troubleshooting: Include diagnostic instructions and test and inspection procedures.
 - 7. Maintenance: Include inspection procedures, types of cleaning agents, methods of cleaning, procedures for preventive and routine maintenance, and instruction on use of special tools.
 - 8. Repairs: Include diagnosis, repair, and disassembly instructions; instructions for identifying parts; and review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Owner will furnish qualified personal to describe Owner's intended operations.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 1. Schedule training with Owner with at least seven days' advance notice.
- D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.

END OF SECTION 01 79 00

SECTION 02 41 12 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Demolition and removal of selected portions of a building.
 - 2. Patching and repairs.
 - 3. Coordinate all demolition through the Architect .
 - 4. Handling and properly disposing of hazard materials such as asbestos and paint that contains lead.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section "Cutting and Patching" for cutting and patching procedures for selective demolition operations.
 - 2. Division 1 Section "Contract Closeout" for record document requirements.

1.3 DEFINITIONS

- A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner's property.
- B. Remove and Salvage: Items indicated to be removed and salvaged remain the Owner's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to storage areas designated by the Architect .
- C. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.
- D. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Architect , items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.

- E. Asbestos-Containing Materials: Materials that contain more than 1 percent Asbestos as stipulated by the federal AHERA (Asbestos Hazard Emergency Response Act).
- F. Lead-Based Paint: The most severe of paint that contains more than 6 percent lead by weight (600 mg/kg) as stipulated by the SCDHEC (South Carolina Department of Health and Environmental Control) or requirements as stipulated by other governing authorities having jurisdiction.

1.4 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the Owner's property, including trees and other vegetation, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at the Contractor's option.

1.5 SUBMITTALS

- A. General: Prior to beginning demolition, submit each item in this Article for information only, unless otherwise indicated.
- B. Proposed dust-control measures.
- C. Proposed noise-control measures.
- D. Schedule of selective demolition activities indicating the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
 - 2. Interruption of utility services.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Detailed sequence of selective demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
 - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
 - 6. Locations of temporary partitions and means of egress.
 - 7. Submit procedures and methods for shoring, bridging, bracing, and reinforcing.
 - 8. Methods to protect personnel.

- E. Inventory of items to be removed and salvaged.
- F. Inventory of items to be removed by Owner.
- G. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by selective demolition operations.
- H. Record drawings at Project closeout according to Division 1 Section "Contract Closeout."
 - 1. Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.
- I. Immediately after deposits at landfills, submit landfill records indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
- J. Insurance: Submit copy of policy showing name of Carrier, effective dates of insurance, and coverage. Submittal shall include all claim exclusions.
- K. Submit detailed procedures that will be used to handle and dispose of hazard materials, including asbestos-containing materials and lead-based paint, found on the project site.
- L. Certifications: Submit a copy of the current and valid license for all operators that will be handling an disposing of lead-base paint.
 - 1. For each operator, their current lead certification, in conformance with OSHA Standard 29CFR1926.62, showing date, place, and type of certification. Lead paint certifications for each operator shall be maintained throughout the demolition contract.
 - 2. Lead physicals for each operator in conformance with OSHA Standard 29CFR1926.62. Lead physicals for each operator shall be maintained throughout the demolition contract.

1.6 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed selective demolition Work similar to that indicated for this Project.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Predemolition Conference: Conduct conference at Project site to comply with preinstallation conference requirements of Division 1 Section "Project Meetings."

- D. Contractor shall be experienced in handling hazard materials of the type found on the project and licensed by all applicable governing authorities to handle and dispose of all hazard materials found on the site.
- E. The Contractor shall fully comply with all provisions of the Contract Documents including, but not limited to, providing and installing such entities as the products, materials, equipment, components, or systems that were proposed at the time bids were received. Except for extenuating circumstances as determined by the Architect, notification of not being able to meet any of the provisions of the Contract Documents or communicating conflicts in the Contract Documents to the Architect will not be considered after receipt of bids; and the Contractor shall fully comply with the Contract Documents at no increase in Contract Sum or Contract Time.

1.7 PROJECT CONDITIONS

- A. Owner will occupy portions of the building immediately adjacent to selective demolition area. Conduct selective demolition so that Owner's operations will not be disrupted. Provide not less than 72 hours' notice to ARCHITECT of activities that will affect Owner's operations.
- B. Owner or Architect assume no responsibility for actual condition of buildings to be selectively demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Asbestos: It is not expected that asbestos will be encountered in the course of this Contract. Any known asbestos will be removed by Owner before start of Work. During execution of the Work, if asbestos or asbestos-containing materials are suspected of being present, the following steps shall be performed immediately:
 - 1. Immediately, stop work in the suspected area.
 - 2. Immediately, notify the Architect.
 - 3. Do not touch, disturb or approach the suspected area or materials.
 - 4. Erect a barrier around the suspected area or materials. The barrier shall not be less than 10 feet from the suspected area or materials. If the area is in a room or space that can be sealed or closed to traffic, seal or close off the space. If there are HVAC vents to the space, seal the vents.
 - 5. Erect a sign that is clearly legible from at least 10 feet. If the sign will be exposed to weather, the sign and lettering shall be weatherproof. Post the sign at each access to the area and around the barrier. Space the signs around the barrier a maximum of 8 feet apart. The sign shall contain the following wording:

DANGER

ASBESTOS-CONTAINING MATERIALS ARE PRESENT. DO NOT ENTER OR CROSS THE BARRIER WITHOUT WRITTEN PERMISSION AND APPROVED PROTECTIVE CLOTHING.

D. Storage or sale of removed items or materials on-site will not be permitted.

1.8 SCHEDULING

A. Arrange selective demolition schedule so as not to interfere with Owner's on-site operations.

1.9 WARRANTY

A. Existing Special Warranty: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

1.11 REGULATORY REQUIREMENTS

A. In addition to the requirements of the "Contract Clauses," comply with the following:

1. Federal, state, and local hauling and disposal regulations.
2. Safety requirements shall conform with ANSI A10.6, "Demolition Operations - Safety Requirements";
3. Standard Building Code, Chapter 33, "Site Work, Demolition and Construction", and Appendix D, "Standards for Demolition";
4. International Building Code, Chapter 33, "Safeguards During Construction", Section 3303, "Demolition".

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

A. Use repair materials identical to existing materials.

1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
2. Use materials whose installed performance equals or surpasses that of existing materials.
3. Comply with Section 01045 - Cutting and Patching.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify and record (photographs and videos are recommended) conditions of both the interior and exterior of existing building prior to beginning the Work. Verification shall include current damage to building and finishes, cleanliness, and the presence moisture, mold, and mildew. Inspections by mold and IAQ specialists are recommended.
 - 1. During execution of Contract, maintain the existing structure in clean, watertight, weather-tight, and structurally sound conditions at all times. Contractor shall be responsible for all repairs to restore existing structure and finishes to their previous conditions that are satisfactory to the Architect .
- B. Verify that utilities have been disconnected and capped.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- E. When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Architect .
- F. Survey the condition of the building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition.
- G. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES

- A. Maintain existing utilities in service and protect them against damage during selective demolition operations.
 - 1. Do not interrupt existing utilities serving occupied or operating facilities, except when authorized in writing by ARCHITECT and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to ARCHITECT and to governing authorities.

- a. Provide not less than 72 hours' notice to ARCHITECT if shutdown of service is required during changeover.
- B. Utility Requirements: Locate, identify, disconnect, and seal or cap off utility services serving building to be interrupted or selectively demolished.
 1. Provide by-pass connections as necessary to maintain continuous service to occupied areas. Provide minimum of 72 hours advance notice to ARCHITECT if shut-down of service is necessary during change-over.
 2. Arrange to shut off indicated utilities with utility companies.
 3. Where utility services are required to be removed, relocated, or abandoned, provide bypass connections to maintain continuity of service to other parts of the building before proceeding with selective demolition.
 4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit after bypassing.
- C. Utility Requirements: Refer to Division 15 and 16 Sections for shutting off, disconnecting, removing, and sealing or capping utility services. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.3 PREPARATION

- A. Vegetation: Take and execute all precautions to protect vegetation, such as trees and shrubs that are not to be disturbed or that may interfere with demolition operations. The Contractor shall be responsible for all unauthorized or accidental cutting or damaging of trees and shrubs, including damage due to careless operation of equipment and stockpiling materials or tracking on grass by equipment.
 1. Trees, bushes, and other vegetation whose branches and stems are in the way of or that will otherwise interfere with demolition, shall be properly and professionally pruned to protect the trees, bushes, and other vegetation. Pruning shall be performed to the satisfaction of the ARCHITECT by a professional and licensed arborist. Pruning shall be only to the extent necessary to prevent interference with the demolition and to protect the trees, bushes and vegetation being pruned.
 2. Trees, bushes, and other vegetation that are scheduled to remain and are damaged during demolition shall be repaired by a professional and licensed arborist. Trees, bushes, and other vegetation that that cannot be repaired to the Architect 's satisfaction, shall be replaced with like kind, species, color, and size, at no additional cost to the Owner.
- B. Employ a certified, licensed exterminator to treat building and to control rodents and vermin before and during demolition operations.
- C. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.

- D. Employ a certified, licensed exterminator to treat building and to control rodents and vermin before and during selective demolition operations.
- E. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from ARCHITECT and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- F. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.
 - 1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
 - 2. Protect existing site improvements, appurtenances, and landscaping to remain.
 - 3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
 - 4. Provide temporary weather protection, during interval between demolition and removal of existing construction, on exterior surfaces and new construction to ensure that no water leakage or damage occurs to structure or interior areas.
 - 5. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during selective demolition operations.
 - 6. Cover and protect furniture, furnishings, and equipment that have not been removed.
 - 7. Do not allow any area, section, or component of floors, roofs, walls, columns, pilasters, or other structure element to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.
- G. Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
 - 1. Construct dustproof partitions of not less than nominal 4-inch studs, 5/8-inch gypsum wallboard with joints taped on occupied side, and 1/2-inch fire-retardant plywood on the demolition side.
 - 2. Insulate partition to provide noise protection to occupied areas.
 - 3. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.

4. Protect air-handling equipment.
 5. Weather-strip openings.
- H. Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of building during selective demolition
1. Strengthen or add new supports when required during progress of selective demolition.
- I. Set up, install, and maintain necessary security, enclosures, and barriers for the facility during demolition and construction to protect the structure, the interior, and the contents and to ensure that unauthorized personnel are denied access to the facility. Coordinate requirements with the Architect .

3.4 POLLUTION CONTROLS

- A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.
1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
- B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level.
- C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.
- D. Noise Control:
1. Use equipment with operable, effective, and undamaged mufflers to reduce noise to levels acceptable to the Architect .
 2. If noise levels are above acceptable levels to the Architect erect sound barriers to control noise or conduct demolition during times that are less disturbing to the Owner or a combination of both.

3.5 SELECTIVE DEMOLITION

- A. Demolish and remove existing construction only to the extent required by renovations, repairs, and new construction and as indicated. Use methods required to complete Work within limitations of governing regulations and as follows:
1. Performed all demolition in accordance with OSHA regulations and provisions stipulated in IBC 2006.
 2. Explosives are prohibited
 3. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition work above each floor or tier before disturbing supporting members on lower levels.
 4. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. To minimize disturbance of adjacent surfaces, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 5. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 6. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 7. Maintain adequate ventilation when using cutting torches.
 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 9. Locate selective demolition equipment throughout the structure and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 10. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.
 11. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.
- B. Below-Grade Construction: Demolish foundation walls and other below-grade construction, as follows:

1. Completely remove below-grade construction, including foundation walls and footings.
 2. Break up and remove below-grade concrete slabs, unless indicated to remain.
- C. Damages: Promptly repair damages to adjacent facilities caused by demolition operations.
- D. Remove resilient floor coverings and adhesive according to recommendations of the Resilient Floor Covering Institute's (RFCI) "Recommended Work Practices for the Removal of Resilient Floor Coverings" and Addendum.
1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.
- E. Remove and transport debris and rubbish in a manner that shall prevent spillage on pavements, streets or adjacent areas. Clean up spillage from pavements, streets and adjacent areas
- F. Unknown Elements
1. If unanticipated mechanical, electrical or structural elements are encountered, investigate and measure both nature and extent of the conflict. Submit report to ARCHITECT in written, accurate detail. Pending receipt of directive from Architect . rearrange selective demolition schedule as necessary to continue overall job progress without delay.
 2. Should any hidden and/or inaccessible hazardous material be encountered during the demolition activity, the Contractor performing the demolition shall stop work immediately. Use construction/engineering controls and good work precautions to minimize exposure to workers and personnel on site. Follow proper procedures in accordance with the Toxic Substance Control Act (TSCA).

3.6 PATCHING AND REPAIRS

- A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.
- B. Patching is specified in Division 1 Section "Cutting and Patching."
- C. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
1. Completely fill holes and depressions in existing masonry walls to remain with an approved masonry patching material, applied according to manufacturer's printed recommendations.
- D. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.

- E. Patch and repair floor and wall surfaces in the new space where demolished walls or partitions extend one finished area into another. Provide a flush and even surface of uniform color and appearance.
 - 1. Closely match texture and finish of existing adjacent surface.
 - 2. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
 - 3. Where patching smooth painted surfaces, extend final paint coat over entire unbroken surface containing the patch after the surface has received primer and second coat.
 - 4. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - 5. Inspect and test patched areas to demonstrate integrity of the installation, where feasible.
- F. Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.7 DAILY CLEANUP AND DISPOSAL OF DEMOLISHED MATERIALS

- A. Daily Cleanup: The Contractor shall comply with the following daily cleanup requirements:
 - 1. Do not allow demolished materials, trash, debris, waste, defective materials, and unused materials, equipment and tools to collect in the work areas, areas objectionable to the Owner, or in areas that will be unsightly to passersby. Remove these items on a regular schedule, and dispose of in approved manner and container.
Store materials that cannot be removed daily in areas specified by the Contract Manager.
 - 2. Keep work area clean and free of clutter.
 - 3. Secure all materials, equipment, and tools to prevent movement during windy conditions. Do not allow material or debris to become airborne.
 - 4. Cover all materials, equipment, and tools completely at the end of each day to prevent water entry and so that covers will not loosen or separate during windy conditions.
 - 5. Promptly remove all unused or unneeded sharp or pointed objects, including sheet metal, that may puncture cause injury or damage to the Work.
 - 6. Keep all fasteners, anchors, etc, including screws and nails, in rigid storage containers until ready for use. Put all used or defective mechanical fasteners in a designated rigid container that is clearly marked, **SCRAP**. Do not allow used or defective fasteners to mix with new fasteners.
 - 7. Correct all defects not corrected during normal operations by end of each work day.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.8 CARE OF CUTS AND ABRASIONS

- A. Where cuts and minor abrasions occur to living tissue of trees and shrubs, trace back injured cambium according to arboriculture practice and have wounded area treated by a professional and licensed arborist.

3.9 CLEANING

- A. Sweep the building broom clean on completion of selective demolition operation.
- B. Change filters on air-handling equipment on completion of selective demolition operations.

END OF SECTION 02070

SECTION 02 90 10 -GRASS RESTORATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes repairing and replacing grassing that is damaged during the construction operations.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 2 Section "Site Clearing" for protection of existing trees and planting, topsoil stripping and stockpiling, and site clearing.
 - 2. Division 2 Section "Earthwork" for excavation, filling, rough grading, and subsurface aggregate drainage and drainage backfill.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product certificates signed by manufacturers certifying that their products comply with specified requirements.
 - 1. Manufacturer's certified analysis for standard products.
 - 2. Analysis for other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
- C. Certification of grass seed from seed vendor for each grass-seed mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
- D. Samples of each of the following:

1. 5 lb of mineral mulch for each color and texture of stone required for Project, in labeled plastic bags.
 2. Edging materials and accessories to verify color selected.
- E. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and address of architects and owners, and other information specified.
- F. Material test reports from qualified independent testing agency indicating and interpreting test results relative to compliance of the following materials with requirements indicated.
- G. The Contractor shall fully comply with all provisions of the Contract Documents including, but not limited to, providing and installing such entities as the products, materials, equipment, components, or systems that were proposed at the time bids were received. Except for extenuating circumstances as determined by the Architect, notification of not being able to meet any of the provisions of the Contract Documents or communicating conflicts in the Contract Documents to the Architect will not be considered after receipt of bids; and the Contractor shall fully comply with the Contract Documents at no increase in Contract Sum or Contract Time.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.
- B. Seed: Deliver seed in original sealed, labeled, and undamaged containers.
- C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Coordinate grass schedule with the Owner for types of grass to be planted, location of grass types, planting times, and maintenance.

1.5 COORDINATION AND SCHEDULING

- A. Coordinate installation of planting materials during normal planting seasons for each type of plant material required.

1.6 WARRANTY

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall

be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

- B. Special Warranty: Warrant the grass for a period of one year after date of Substantial Completion, against defects including death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, or abuse by Owner, abnormal weather conditions unusual for warranty period, or incidents that are beyond Contractor's control.

1.7 GRASS MAINTENANCE

- A. Begin maintenance of grass immediately after each area is planted and continue until acceptable grass is established, but for not less than the following periods:
 - B. Maintain and establish grass by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and mulch to produce a uniformly smooth grass.
 - C. Watering: Provide and maintain temporary piping, hoses, and grass watering equipment to convey water from sources and to keep grass uniformly moist to a depth of 4 inches.
 - 1. Water grass at the minimum rate of 1 inch per week.
 - D. Mow grass as soon as there is enough top growth to cut with mower set at specified height for principal species planted. Repeat mowing as required to maintain specified height without cutting more than 40 percent of the grass height. Remove no more than 40 percent of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet.
 - E. Postfertilization: Apply fertilizer to grass after first mowing and when grass is dry.
 - 1. Use fertilizer that will provide actual nitrogen of at least 1 lb per 1000 sq. ft. of grass area.

PART 2 - PRODUCTS

2.1 GRASS MATERIALS

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with the Association of Official Seed Analysts' "Rules for Testing Seeds" for purity and germination tolerances.
 - 1. Seed Mixture: Provide seed of grass species and varieties, proportions by weight, and minimum percentages of purity, germination, and maximum percentage of weed seed as indicated on Schedules at the end of this Section.

2.2 TOPSOIL

- A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, 4 percent organic material minimum, free of stones 1 inch or larger in any dimension, and other extraneous materials harmful to plant growth.
 - 1. Topsoil Source: Reuse surface soil stockpiled on the site. Verify suitability of surface soil to produce topsoil meeting requirements and amend when necessary. Supplement with imported topsoil when quantities are insufficient. Clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful to plant growth.

2.3 SOIL AMENDMENTS

- A. Lime: ASTM C 602, Class T, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent, with a minimum 99 percent passing a No. 8 sieve and a minimum 75 percent passing a No. 60 sieve.

2.4 FERTILIZER

- A. Bonemeal: Commercial, raw, finely ground; minimum of 4 percent nitrogen and 20 percent phosphoric acid.
- B. Superphosphate: Commercial, phosphate mixture, soluble; minimum of 20 percent available phosphoric acid.
- C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea-form, phosphorous, and potassium in the following composition:
 - 1. Composition: 1 lb per 1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
 - 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.
- D. Slow-Release Fertilizer: Granular fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. Composition: 10 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

2.5 MULCHES

- A. Organic Mulch: Organic mulch, free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
 - 1. Type: Shredded hardwood.
 - 2. Type: Ground or shredded bark.
 - 3. Type: Pine straw.
 - 4. Type: Salt hay or threshed straw.
 - 5. Type: Wood and bark chips.
 - 6. Type: Pine needles.
 - 7. Type: Peanut, pecan, and cocoa-bean shells.

2.6 EROSION-CONTROL MATERIALS

- A. Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches long.
- B. Fiber Mesh: Biodegradable twisted jute or spun-coir mesh, 0.92 lb per sq. yd. minimum, with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches long.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas that have been damaged by construction activities to determine the extent of repair. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PLANTING SOIL PREPARATION

- A. Recondition existing grass areas damaged by Contractor's operations, including storage of materials or equipment and movement of vehicles. Also recondition grass areas where settlement or washouts occur or where minor regrading is required. Remove all ruts and other traces of activity and restore to a condition ready for grassing.
- B. Prepare areas damaged by construction activities as follows:
 - 1. Grade grass areas to a smooth, even surface with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future. Remove trash, debris, stones larger than 1-1/2 inches in any dimension, and other objects that may interfere with planting or maintenance operations.
 - 2. Remove sod and vegetation from diseased or unsatisfactory grass areas; do not bury into soil. Remove topsoil containing foreign materials resulting from Contractor's operations,

- including oil drippings, fuel spills, stone, gravel, and other construction materials, and replace with new topsoil.
- a. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of it off the Owner's property.
 3. Where substantial grass remains, mow, dethatch, core aerate, and rake. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.
 4. Where grass cannot be reconditioned, remove and dispose of existing grass, vegetation, and turf damaged during construction activities. Do not turn over into soil being prepared for grass.
 5. Till surface soil to a depth of at least 6 inches. Apply required soil amendments and initial fertilizers and mix thoroughly into top 4 inches of soil. Trim high areas and fill in depressions. Till soil to a homogenous mixture of fine texture.
 6. Before mixing seed, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful to plant growth.
 7. Mix soil amendments and fertilizers with topsoil at rates indicated. Delay mixing fertilizer if planting does not follow placing of planting soil within a few days.
 8. Mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.
 - a. Mix lime with dry soil prior to mixing fertilizer. Prevent lime from contacting roots of acid-tolerant plants.
 9. Limit subgrade preparation to areas that will be planted in the immediate future.
 10. Loosen subgrade to a minimum depth of 4 inches. Remove stones larger than 1-1/2 inches in any dimension and sticks, roots, rubbish, and other extraneous materials.
 - a. Clean surface soil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful to plant growth.
 - b. Remove waste material, including grass, vegetation, and turf, and legally dispose of it off the Owner's property.
 11. Spread planting soil mixture to depth required to meet original thickness, grades, and after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen.
 - a. Place approximately 1/2 the thickness of planting soil mixture required. Work into top of loosened subgrade to create a transition layer and then place remainder of planting soil mixture.

- b. Restore prepared areas if eroded or otherwise disturbed after fine grading and before planting.
12. Moisten prepared grassing areas before planting when soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.3 MULCHING

- A. Mulch backfilled surfaces of slopes, pits, trenches, planted areas.
- B. Weed-Control Barriers: Install the following weed-control barriers according to manufacturer's recommendations, before mulching. Completely cover area to be mulched, lapping edges a minimum of 6 inches.
 1. Material and Seam Treatment: Sheet polyethylene with seams taped.
- C. Organic Mulch: Apply the following average thickness of organic mulch and finish level with adjacent finish grades. Do not place mulch against trunks or stems.
 1. Thickness: 2 inches.

3.4 SEEDING

- A. Sow seed with a spreader or a seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in 2 directions at right angles to each other.
 1. Do not use wet seed or seed that is moldy or otherwise damaged in transit or storage.
- B. Rake seed lightly into top 1/8 inch of topsoil, roll lightly, and water with fine spray.
- C. Protect seeded areas with slopes less than 1:6 against erosion by spreading straw mulch after completion of seeding operations. Spread uniformly at a minimum rate of 2 tons per acre to form a continuous blanket 1-1/2 inches loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.
 1. Anchor straw mulch by crimping into topsoil by suitable mechanical equipment.

3.5 HYDROSEEDING

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogenous slurry suitable for hydraulic application.

1. Mix slurry with nonasphaltic tackifier.

3.6 CLEANUP AND PROTECTION

- A. During grassing, keep pavements clean and work area in an orderly condition.
- B. Protect landscaping from damage due to grassing operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of it off the Owner's property.

3.8 SEED MIXTURES SCHEDULE

- A. Provide a seed mixture to match existing grass.

END OF SECTION 02901

SECTION 05 50 00 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following metal fabrications:
 - 1. Loose bearing and leveling plates.
 - 2. Miscellaneous framing and supports for applications where framing and supports are not specified in other sections.
 - 3. Miscellaneous steel trim and edgings.
 - 4. Ladders
 - 5. Field surface preparation and field touch-up.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 05 Section "Structural Steel" for structural steel framing system components.
 - 2. Division 09 Section "Painting" for touch up of metal fabrications.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 01 Specification Sections.
- B. Shop drawings detailing fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other Sections.
 - 1. Show method and details of bracing, including type and size of members and connections to be used, for all roof penetrations that are 12 inches or greater in diameter.
- C. Samples representative of materials and finished products as may be requested by Architect.
- D. Welder certificates signed by Contractor certifying that welders comply with requirements specified under the "Quality Assurance" Article.

- E. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include a list of completed projects with project name, addresses, names of architects and owners, and other information specified.

1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: Engage a firm experienced in fabricating structural steel similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate structural steel without delaying the Work. Steel fabricator shall meet the following minimum requirements:
 - 1. Minimum of 10 years' continuous experience on projects of similar size and complexity.
 - 2. Have AISC certification or a certified written letter from an approved third party special inspections agency, on the agency's letterhead, stating the following:
 - a. The steel fabricator's quality control program and manual comply with requirements in Chapter 17 of the applicable edition of the IBC.
 - b. Results of observed periodic auditing of fabrication practices and procedures comply with Chapter 17 of the applicable edition of the IBC.
 - b. Performed work meets acceptable industry standards.
 - 3. Be able to perform the specified surface preparation requirements. However, as a minimum, be able to perform surface preparation up to and including SSPC 6 by Wheelabrator or blast.
 - 4. Be able to apply inorganic zinc primers and high build epoxy primers
 - 5. If a contractor has listed himself as self-performing for this discipline and is not listed below as prequalified, that contractor shall complete the applicable sections of the Request For Substitute Form and provide proof of meeting all qualification provisions listed herein. Pre-approved fabricators are:
 - a. Dixiana
 - b. Shirley's Iron Works I
 - c. CMC-South Carolina Steel
 - d. Steel-Fab
 - e. Tate Steel
 - f. Yeargin Miscellaneous Metals
 - g. Steel Works of the Carolinas
- B. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code--Steel," AWS D1.2 "Structural Welding Code--Aluminum," and AWS D1.3 "Structural Welding Code--Sheet Steel."
 - 1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.
- C. Substitute Requests For A Specified Entity
 - 1. Include the following information on the cover page of the request:
 - a. Name of Project and project number as shown in the header of the specification
 - b. Date request is being made.

- c. Name of person, company, and contact information of person requesting substitute.
 - d. Specification title and number and drawing number where the specified product is listed or shown.
 - e. Exact name of the specified entity and substitute entity. .
2. When requesting a substitute, include all requested and required supporting data, specifications, and performance criteria. The Architect must receive this substitute request no later than the time stated elsewhere for submitting product substitutions. If no time is stated, then 10 days prior to date of bid opening. When a Request For Substitute Form is included in the Project Manual, properly complete the form and include it with the submittal.
3. Verbal requests for a substitute or requests that do not comply with these provisions are not acceptable, will be rejected, and will not extend the submittal deadline. Submittals that are incomplete have vague or unspecific answers (“Better”. “Cheaper”. “More competitive”, etc.); that lack supporting data to substantiate equal or superior quality/design; that do not include the requested proof, verification, reports, and substantiating documentation; or are received after submittal deadline will be rejected. Provide convincing answers as to why the substitute should be approved. Rejection or disapproval will not extend the submittal deadline.
 - a. If the substitute entity differs from specified entity, compare the substitute entity with the specified entity in a tabular format that clearly shows all the differences.
4. Include the following information on all requests for substitutes:
 - a. Length of time the manufacturer has been in business.
 - b. Whether the manufacturer operated under any other name, and if so, under what name and when?
 - c. Length of time the substitute entity has been on the market.
 - d. Whether the substitute entity has been marketed under any other name, and if so, under what name and when?
 - e. Who will install and service the substitute entity?
 - f. Whether the installer is trained and certified by the manufacturer? If so, describe how this training and certification are achieved and if training records are maintained?
 - g. All required changes in the project design that will be required to incorporate the substitute entity.
 - h. Describe any known problems or failures associated with the substitute entity? If there are any, provide details.
5. The manufacturer’s published literature, description, capabilities, operating and performance parameters, options, accessories, etc. of all submitted substitutes shall meet or exceed those published by the manufacturer of the specified entity even if they are not specifically mentioned in the Contract Documents. Additionally, manufacturers whose standards are less than those of the specified entity but are capable of producing an entity that meets the specified entity shall not, for the convenience of their normal production methods, vary from the specified entity standards.

6. Where test data and standards are being submitted as supporting data and for comparison with the specified item, comply with the following requirements. Submittals not complying with these provisions will be considered incomplete, unacceptable, and will be rejected:
 - a. All substitutes shall meet all of the minimum performance criteria of the specified entity.
 - b. Submit certified data provided by an independent testing laboratory.
 - c. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria and denoting the differences between the specified item the substitute item.
 - d. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item.
 - e. Where a performance criterion is not listed in the specifications, comply with the specified product manufacturer's published data for performance criteria.
 - f. Where the specified entity requires certifications, registrations, approvals, policies, practices, etc., submit proof that the substitute entity is in compliance.

7. Each and all requests for substitutes shall be signed by the person making the submittal. By signing the submittal, the person requesting the substitute certifies and agrees to the following requirements. Requests without the signature of a responsible person will be rejected.
 - a. That the specifications have been read and are understood,
 - b. That the entity being submitted meets or exceeds all provisions of the specifications,
 - c. That all submitted information is true and accurate,
 - d. Will remove the substitute entity and replace it with an acceptable product, at his expense, if it is determined that the substitute does not meet the specifications as certified.
 - e. Agrees to pay for all necessary design changes and increased construction costs to incorporate the substitute entity.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Check actual locations of walls and other construction to which metal fabrications must fit by accurate field measurements before fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver metal fabrications to Project site in such quantities and at such times to ensure continuity of installation.
 1. At delivery and prior to unloading, examine all steel for signs of thin or no shop primer. If shop-primed steel has numerous signs of improper packing, handling, or preparation,

- as evidenced by numerous breaks, chips, scratches, and heavily rusted areas in the shop primer, do not accept the steel. Where existing primer appears to be thin as evidenced by shadows or variegated appearance, or rust bloom, check thickness of primer with a magnetic thickness tester such as a Positester.
2. If unloaded, staged, or erected shop-primed steel is found to have low shop-primer as described above, the Contractor shall be responsible for bringing the required surface preparation and priming to bring the shop primer thickness to the specified dry film thickness, even if the steel is erected.
- B. Store materials to permit easy access for inspection and identification. Keep steel members off ground by using pallets, platforms, or other supports. Handle and protect steel members and packaged materials from damage, corrosion, and deterioration. Do not erect rust steel.
1. Store fasteners in a protected place. Clean and relubricate bolts and nuts that become dry or rusty before use.
 2. Stack in such a manner that surface water will properly drain. If materials are to be stored for an extended period of time, cover in such a way that rain will not fall on the material, but air will flow freely through the stack.
 3. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.
 4. Store steel so as to be protected from mud and dirt. Remove all traces of mud and dirt prior to erecting. Mud and dirt shall be removed carefully to prevent damage to the primer.

1.7 SEQUENCING

- A. Supply anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, templates, instructions, and directions, as required, for installation.

PART 2 - PRODUCTS

2.1 FERROUS METALS

- A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- B. Steel Plates, Shapes, and Bars: ASTM A 36.

- C. Welding Rods and Bare Electrodes: Select according to AWS specifications for the metal alloy to be welded.

2.2 PAINT

- A. Shop Primer for Ferrous Metal: Compatible with finish paint systems indicated, and capability of providing a sound foundation for field-applied topcoats despite prolonged exposure. Compatible with finish paint specified in Section 09900 - Painting. Capable of being applied to a minimum dry film thickness of 3 mils DFT and cover surface profile created by surface preparation. Shop primer to be by the same manufacturer as the finish coat. Cross coating is not permitted.
 - 1. Interior Steel: Sherwin Williams Kem Kromick Universal Primer B50WZ1 White or a reviewed substitute. Shop painted steel that arrives on site with a red or gray primer will be re-primed in the field with the specified primer at the Contractor's expense.
 - 2. Exterior: Hot dipped galvanized
- B. Galvanizing Repair Paint: C. Galvanizing Repair Paint: Galvilite Cold Galvanizing Repair Compound, Esterified Epoxy Based Zinc Rich Metal Primer by ZRC Worldwide or a reviewed substitute. Use to repair all damaged galvanizing. As a minimum, galvanizing repair shall comply with the following:
 - 1. Specifications: Fed. Spec. DOD-P-21035A and Mil Spec. Mil-P-26915A
 - 2. Registration: ISO 9001
 - 3. VOC Compliant
 - 4. Zinc in Dried Film: 95 percent, ASTM D520 Type III
 - 5. Percent Solids: 52 percent by volume.
 - 6. Pencil Hardness: 2H per ASTM D3363
 - 7. UL: Recognized by UL as being equivalent to hot dipped galvanized
 - 8. Impact Resistance: Greater than 30 inch-lbs. per ASTM D2794
 - 9. Abrasion Resistance: 11.5 liters per dry mil when tested at 3 mils DFT per ASTM D98
 - 10. Dry Time to Touch: 20-30 minutes at 1.5 mils DFT
 - 11. Recoat Time: 24-48 hours

2.3 FASTENERS

- A. General: Provide plated fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating. Select fasteners for the type, grade, and class required.
 - 1. All fasteners in an exterior application or that are in contact with wood or cementitious materials shall be galvanized in accordance with ASTM A153.
- B. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A, with hex nuts, ASTM A 563, and, where indicated, flat washers.
- C. Machine Screws: ANSI B18.6.3.

- D. Lag Bolts: ANSI B18.2.1.
- E. Wood Screws: Flat head, carbon steel, ANSI B18.6.1.
- F. Plain Washers: Round, carbon steel, ANSI B18.22.1.
- G. Lock Washers: Helical, spring type, carbon steel, ANSI B18.21.1.
- H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
 - 1. Material: Carbon steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material: Group 1 alloy 304 or 316 stainless-steel bolts and nuts complying with ASTM F 593 and ASTM F 594.
- I. Toggle Bolts: FS FF-B-588, tumble-wing type, class and style as required.

2.4 GROUT

- A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- B. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Nonshrink, Nonmetallic Grouts:
 - a. B-6 Construction Grout; W. R. Bonsal Co.
 - b. Diamond-Crete Grout; Concrete Service Materials Co.
 - c. Supreme; Cormix Construction Chemicals.
 - d. Sure-grip High Performance Grout; Dayton Superior Corp.
 - e. Euco N-S Grout; Euclid Chemical Co.
 - f. Five Star Grout; Five Star Products.
 - g. Vibropruf #11; Lambert Corp.
 - h. Crystex; L & M Construction Chemicals, Inc.
 - i. Masterflow 928 and 713; Master Builders Technologies, Inc.
 - j. Sealtight 588 Grout; W. R. Meadows, Inc.
 - k. SonogROUT 14; Sonneborn Building Products--ChemRex, Inc.
 - l. Kemset; The Spray-Cure Company.

2.5 FABRICATION, GENERAL

- A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.
- B. Galvanize all ferrous metal
 - 1. In contact with concrete, masonry, earth
 - 2. Used for exterior applications
 - 3. Bearing plates for joists, beams, and lintels in masonry walls .
- C. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- D. Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss.
 - 1. Temperature Change (Range): 100 deg F.
- E. Shear and punch metals cleanly and accurately. Remove burrs.
- F. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- G. Remove sharp or rough areas on exposed traffic surfaces.
- H. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
- I. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.
- J. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

- K. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- L. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- M. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

2.6 MISCELLANEOUS STEEL TRIM

- A. Unless otherwise indicated, fabricate units from structural steel shapes, plates, and bars of profiles shown with continuously welded joints, and smooth exposed edges. Miter corners and use concealed field splices wherever possible.
- B. Provide cutouts, fittings, and anchorages as required to coordinate assembly and installation with other work. Provide anchors, welded to trim, for embedding in concrete or masonry construction, spaced not more than 6 inches from each end, 6 inches from corners, and 24 inches o.c., unless otherwise indicated.

2.7 LADDERS

- A. Steel Ladders, Vertical
 - 1. Fabricate to dimensions and shapes detailed. Coat each rung with aluminum-oxide granules set in epoxy-resin adhesive to provide slip-resistant rungs. If not detailed then fabricate as follows:
 - a. General: Fabricate ladders for the locations shown, with dimensions, spacings, details, and anchorages as indicated. Comply with requirements of ANSI A14.3.
 - b. Siderails: Continuous, steel, 1/2-by-2-1/2-inch flat bars, with eased edges, spaced 18 inches apart.
 - c. Bar Rungs: 3/4-inch- diameter steel bars, spaced 12 inches o.c.
 - d. Fit rungs in centerline of side rails, plug weld and grind smooth on outer rail faces.
 - e. Support each ladder at top and bottom and at intermediate points spaced not more than 60 inches o.c. with welded or bolted steel brackets.
 - 1) Size brackets to support design dead and live loads indicated and to hold centerline of ladder rungs clear of the wall surface by not less than 7 inches.
 - 2) Extend side rails 42 inches above top rung, and return rails to wall or structure unless other secure handholds are provided. If the adjacent structure does not extend above the top rung, goose-neck the extended rails back to the structure to provide secure ladder access.

- f. Provide nonslip surfaces on top of each rung by coating with abrasive material metallically bonded to the rung by a proprietary process such as one of the following:
 - 1) Mebac, IKG Borden.
 - 2) SLIP-NOT, W. S. Molnar Co.

2.8 FINISHES, GENERAL

- A. Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applying and designing finishes.
- B. Finish metal fabrications after assembly.
- C. Hot-dip galvanize all ferrous metal in exterior locations, in exterior walls, and in contact with cementitious or masonry construction, or with treated wood.

2.9 SHOP PRIMING

- A. Shop prime steel surfaces not galvanized except the following:
 - 1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
 - 2. Surfaces to be field welded.
 - 3. Surfaces to be high-strength bolted with slip-critical connections.
 - 4. Surfaces to receive sprayed-on fireproofing.
 - 5. Galvanized surfaces.
 - 6. Faying surfaces.
- B. Preparation for Shop Priming: Clean surfaces to be painted. Remove loose rust, loose mill scale, and spatter, slag, or flux deposits. Prepare uncoated ferrous metal surfaces to comply with requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:
 - 1. Exteriors (SSPC Zone 1B): SSPC-SP 2 "Solvent Cleaning." followed by SSPC-SP 6 "Commercial Blast Cleaning" for metals to be galvanized, and metals scheduled for exterior use ."
 - 2. Interiors (SSPC Zone 1A): SSPC-SP 2 "Solvent Cleaning." followed by SSPC-SP 3 "Power Tool Cleaning."
- C. Shop Priming
 - 1. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes or to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with requirements of SSPC-PA 1 "Paint Application Specification No. 1" for shop painting. Apply shop primer to cover profile of surface preparation.

2. Immediately after surface preparation, apply primer according to manufacturer's instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 3.0 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
 3. Do not allow prepared and cleaned surfaces to remain unprimed over night or for longer than 8 hours before priming. Surfaces not primed within these parameters shall be recleaned prior to priming.
 4. Stripe paint corners, crevices, bolts, rivets, welds, and edges. Spray all Bolts and rivets from at least 4 different angles. Cover all sides of rivets and bolts equally.
 5. Apply 2 coats of shop paint to inaccessible surfaces after assembly or erection. Change color of second coat to distinguish it from first.
- D. Galvanizing: For those items indicated for galvanizing, apply zinc coating by the hot-dip process complying with the following requirements. If not indicated, then galvanize all ferrous metals exposed to moisture or weather, and that are in contact with wood, masonry, or cementitious materials:
1. ASTM A 153 for galvanizing iron and steel hardware.
 2. ASTM A 123 for galvanizing both fabricated and unfabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299 inch thick or thicker.
 3. Galvanize steel and fasteners in the following conditions:
 - a. Where indicated
 - b. All steel in contact with earth, cementitious materials, wood, and insulation. Surfaces to receive sprayed fireproofing are not to be galvanized unless recommended by the fire proofing manufacturer. Galvanize entire member even is only a portion of the member is in contact.
 - c. All steel that will be exposed to weather or to frequent moist conditions.
 4. Prepare all surfaces to be galvanized according to SSPC SP6 – Commercial Blast.
- E. Steel that arrives on site with rusted or damaged surfaces may be inferred as improper handling, surface preparation, or shop priming and will be corrected at the fabricator's expense or may be rejected if rusting is excessive. The General Contractor shall be responsible for all steel that is accepted with rusting or damaged surfaces.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installing anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.
- B. Set sleeves in concrete with tops flush with finish surface elevations. Protect sleeves from water and concrete entry.

3.2 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction. Include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop-welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units that have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.
- E. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
- F. Roof Penetration Framing: Provide and install permanent bracing and supports around all roof penetrations that are 12 inches in diameter or greater.
- G. Back Priming: For all unprimed steel and steel with damaged primer or galvanizing, back prime, including all edges and concealed surfaces, of all ferrous and galvanized metal prior to

installation. Apply primer to the same specifications as for the exposed surfaces. Treat all cut edges, end cuts, welds, and otherwise disturbed surfaces in the same way. Ferrous items shall be completely encapsulated with primer. Installed items not back-primed shall be removed, properly primed, and reinstalled at the Contractor's expense. Damaged materials shall be replaced. This provision applies to all ferrous and galvanized steel that is installed in exterior locations, in unconditioned spaces, and that are in contact with wood or cementitious materials. However, do not prime faying surfaces, surfaces that are to receive sprayed fire proofing, or other scheduled or noted surfaces not to be primed. Comply with surface preparation and priming specified in Section 09900 – Painting.

1. Protect primed and finished steel that is in contact with masonry and cementitious surfaces from abrasion and corrosion caused by alkali action. Protection shall not interfere with rigidity of installation.

3.3 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and primer damaged during handling and erection. Apply paint to exposed areas using same material as used for shop painting. Perform all surface preparation and priming as described for shop performed surface preparation and priming in Part 2 of this specification.
 1. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and apply galvanizing repair paint according to ASTM A 780. Perform all surface preparation as described for shop performed surface preparation in Part 2 of this specification.

END OF SECTION 05 50 00

SECTION 07 84 00 - FIRESTOPPING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. All firestopping shall be performed only by the same experienced specialty entity having the specified qualifications. Fire stopping shall not be performed by the various building disciplines, such as mechanical, HVAC, plumbing, electrical, etc.
- B. This Section includes through-penetration firestop systems for penetrations through the following fire-resistance-rated assemblies, including both empty openings and openings containing penetrating items:
 - 1. Floors.
 - 2. Roofs.
 - 3. Walls and partitions.
 - 4. Smoke barriers.
 - 5. Construction enclosing compartmentalized areas.
 - 6. Construction Gap Fire-Stopping:
 - a. Fire stopping at construction gaps between edges of floor slabs and exterior wall construction.
 - b. Fire stopping at construction gaps between tops of partitions and underside of structural systems.
 - c. Fire stopping at construction gaps between tops of partitions and underside of ceilings or ceiling assemblies.
 - d. Fire stopping control joints in masonry partitions.
- C. Related Sections include the following:
 - 1. See Mechanical and Electrical drawings

1.3 PERFORMANCE REQUIREMENTS

- A. General: For the following constructions, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assembly penetrated.

1. Fire-resistance-rated load-bearing walls, including partitions, with fire-protection-rated openings.
 2. Fire-resistance-rated non-load-bearing walls, including partitions, with fire-protection-rated openings.
 3. Fire-resistance-rated floor assemblies.
 4. Fire-resistance-rated roof assemblies.
- B. For through-penetration firestop systems exposed to view, traffic, moisture, and physical damage, provide products that after curing do not deteriorate when exposed to these conditions both during and after construction.
1. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant through-penetration firestop systems.
 2. For floor penetrations with annular spaces exceeding 4 inches in width and exposed to possible loading and traffic, provide firestop systems capable of supporting floor loads involved either by installing floor plates or by other means.
 3. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.
- C. For through-penetration firestop systems exposed to view, provide products with flame-spread ratings of less than 25 and smoke-developed ratings of less than 250, as determined per ASTM E 84.
- D. Fire-Rated Through-Penetration Firestop Systems: Provide through-penetration firestop systems to maintain the intended UL construction rating, as determined per ASTM E 814, but not less than that equaling or exceeding the fire-resistance rating of the constructions penetrated.
- E. Fire-Resistive Joint Sealants: Provide joint sealants that meet fire-resistance ratings indicated, as determined per ASTM E 2079, but not less than that equaling or exceeding the fire-resistance rating of the construction in which the joint occurs.

1.4 SUBMITTALS

- A. Product Data: For each type of through-penetration firestop system product indicated.
1. Identification Tags: Submit samples of identification tags that will be installed at each location.
- B. Shop Drawings: For each through-penetration firestop system, show each kind of construction condition penetrated, relationships to adjoining construction, and kind of penetrating item. Include firestop design designation of testing and inspecting agency acceptable to authorities having jurisdiction that evidences compliance with requirements for each condition indicated.

1. Submit documentation, including illustrations, from a qualified testing and inspecting agency that is applicable to each through-penetration firestop system configuration for construction and penetrating items.
 2. here Project conditions require modification of qualified testing and inspecting agency's illustration to suit a particular through-penetration firestop condition, submit illustration, with modifications marked, approved by through-penetration firestop system manufacturer's fire-protection engineer.
 3. Submit the type fire stopping to be installed for each moisture and movement condition encountered.
- C. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Product Certificates: Signed by manufacturers of through-penetration firestop system products certifying that products furnished comply with requirements.
- E. Product Test Reports: From a qualified testing agency indicating through-penetration firestop system complies with requirements, based on comprehensive testing of current products.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications:
1. An experienced specialty firestop contractor who has successfully completed penetration firestop systems similar in material, design, extent, and complexity to that indicated for this Project. Shall have completed a minimum of five projects of comparable size and complexity as this project within the last 3 years.
 2. Certified and licensed, as applicable, by the applicable governing authorities and be accredited for installation by FM Standard 4491 – Approval of Firestop Contractors or the UL Certified Firestop Contractor Program. Provide proof submitting name of accrediting agency (UL or FM), date of last inspection by accrediting agency, name of Designate Responsible Individual (DRI), and a copy of the Quality Manual.
 3. Be a current member in good standing of the Firestop Contractors International Association.
 4. Has in-place work that has resulted in construction with a record of successful in-service performance.
 5. Have the necessary experience, on-hand staff, and training to install manufacturer's products per specified requirements.
 6. A manufacturer's willingness to sell its through-penetration firestop system products to Contractor or to an installer engaged by Contractor does not in itself confer qualification on buyer or installer.
- B. Fire Stopping Inspection
1. Qualifications of Fire stopping Inspector

- a. Contractor shall contract with and pay for a qualified inspector with the following qualifications.
 - b. Shall not be related to the installer or general contractor in any way including business relationships including subsidiaries, distributors, manufacturers, representatives, etc.
 - c. Shall comply with all provisions of ASTM E2174 and ASTM E2393
 - d. Shall have successfully passed the FM 4491 or the Firestop Designated Responsible Individual (DRI) examinations.
2. Duties of the Inspector
- a. Inspect all firestopping installation for compliance with requirements of local governing authorities and codes
 - b. Advise the installer of all noted deficiencies verbally at the time of observation and in writing within 24 hours. Also inform installer of locations requiring firestopping that were apparently missed.
- C. Source Limitations: Obtain through-penetration firestop systems, for each kind of penetration and construction condition indicated, from a single manufacturer.
- D. Fire-Test-Response Characteristics: Provide through-penetration firestop systems that comply with the following requirements and those specified in "Performance Requirements" Article:
1. Firestopping tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is **UL**, or another agency performing testing and follow-up inspection services for firestop systems acceptable to authorities having jurisdiction.
 2. Through-penetration firestop systems are identical to those tested per ASTM E 814. Provide rated systems complying with the following requirements:
 - a. Through-penetration firestop system products bear classification marking of qualified testing and inspecting agency.
 - b. Through-penetration firestop systems correspond to those indicated by reference to through-penetration firestop system designations listed by the following:
 - 1) UL in "Fire Resistance Directory."
- E. On-Site Training: The fire stopping manufacturer shall provide all required on-site training of the installer applicators to ensure the installer can comply with fire stopping manufacturer's instructions to meet required UL ratings.
- F. Substitute Requests For A Specified Entity
1. Provisions, requirements, and stipulations stated under this paragraph of this specification apply not only to this specification, but they also apply to all other specifications that are included in the project manual, on the drawings or are otherwise a part of the Contract Documents even if not so stated in these documents. Information requested under this paragraph heading is the minimum required information for

consideration and evaluation and additional information may be requested. This information is required in addition to information required by any substitute request forms that may be included in the Project Manual or Contract Documents, or otherwise provided.

2. Where the Contract Documents list at least three entities (products, materials, components, systems, manufacturers, installers, methods, etc.), the Architect reserves the option to reject any and all requests for a substitute. Where the Contract Documents list only one entity without “Or equal” or similar language, substitutes will not be considered. Where the Contract Documents list less than 3 entities, substitutes may be reviewed and evaluated on an individual base.
3. Include the following information on the cover page of the request:
 - a. Name of Project and project number as shown in the header of the specification
 - b. Date request is being made.
 - c. Name of person, company, and contact information of person requesting substitute.
 - d. Specification title and number and drawing number where the specified product is listed or shown.
 - e. Exact name of the specified entity and substitute entity. .
4. When requesting a substitute, include all requested and required supporting data, specifications, and performance criteria. The Architect must receive this substitute request no later than the time stated elsewhere for submitting product substitutions. If no time is stated, then 10 days prior to date of bid opening. When a Request For Substitute Form is included in the Project Manual, properly complete the form and include it with the submittal.
5. Verbal requests for a substitute or requests that do not comply with these provisions are not acceptable, will be rejected, and will not extend the submittal deadline. Submittals that are incomplete have vague or unspecific answers (“Better”. “Cheaper”. “More competitive”, etc.); that lack supporting data to substantiate equal or superior quality/design; that do not include the requested proof, verification, reports, and substantiating documentation; or are received after submittal deadline will be rejected. Provide convincing answers as to why the substitute should be approved. Rejection or disapproval will not extend the submittal deadline.
 - a. If the substitute entity differs from specified entity, compare the substitute entity with the specified entity in a tabular format that clearly shows all the differences.
6. Include the following information on all requests for substitutes:
 - a. Length of time the manufacturer has been in business.
 - b. Whether the manufacturer operated under any other name, and if so, under what name and when?
 - c. Length of time the substitute entity has been on the market.
 - d. Whether the substitute entity has been marketed under any other name, and if so, under what name and when?

- e. Who will install and service the substitute entity?
 - f. Whether the installer is trained and certified by the manufacturer? If so, describe how this training and certification are achieved and if training records are maintained?
 - g. All required changes in the project design that will be required to incorporate the substitute entity.
 - h. Describe any known problems or failures associated with the substitute entity? If there are any, provide details.
7. The manufacturer's published literature, description, capabilities, operating and performance parameters, options, accessories, etc. of all submitted substitutes shall meet or exceed those published by the manufacturer of the specified entity even if they are not specifically mentioned in the Contract Documents. Additionally, manufacturers whose standards are less than those of the specified entity but are capable of producing an entity that meets the specified entity shall not, for the convenience of their normal production methods, vary from the specified entity standards.
8. Where test data and standards are being submitted as supporting data and for comparison with the specified item, comply with the following requirements. Submittals not complying with these provisions will be considered incomplete, unacceptable, and will be rejected:
- a. All substitutes shall meet all of the minimum performance criteria of the specified entity.
 - b. Submit certified data provided by an independent testing laboratory.
 - c. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria and denoting the differences between the specified item the substitute item.
 - d. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item.
 - e. Where a performance criterion is not listed in the specifications, comply with the specified product manufacturer's published data for performance criteria.
 - f. Where the specified entity requires certifications, registrations, approvals, policies, practices, etc., submit proof that the substitute entity is in compliance.
9. Each and all requests for substitutes shall be signed by the person making the submittal. By signing the submittal, the person requesting the substitute certifies and agrees to the following requirements. Requests without the signature of a responsible person will be rejected.
- a. That the specifications have been read and are understood,
 - b. That the entity being submitted meets or exceeds all provisions of the specifications,
 - c. That all submitted information is true and accurate,
 - d. Will remove the substitute entity and replace it with an acceptable product, at his expense, if it is determined that the substitute does not meet the specifications as certified.

- e. Agrees to pay for all necessary design changes and increased construction costs to incorporate the substitute entity.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver through-penetration firestop system products to Project site in original, unopened containers or packages with intact and legible manufacturers' labels identifying product and manufacturer; date of manufacture; lot number; shelf life, if applicable; qualified testing and inspecting agency's classification marking applicable to Project; curing time; and mixing instructions for multicomponent materials.
- B. Store and handle materials for through-penetration firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install through-penetration firestop systems when ambient or substrate temperatures are outside limits permitted by through-penetration firestop system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilate through-penetration firestop systems per manufacturer's written instructions by natural means or, where this is inadequate, forced-air circulation.

1.8 COORDINATION

- A. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.
- B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration firestop systems.
- C. Notify selected applicable inspecting agency at least seven days in advance of through-penetration firestop system installations; confirm dates and times on days preceding each series of installations.
- D. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until the independent inspecting agency and building inspector, if required by authorities having jurisdiction, have examined each installation.

PART 2 – PRODUCTS, MANUFACTURERS

2.1 Manufacturers: Subject to compliance with requirements, provide products by one of the following or approved equal:

- A. Hilti
- B. International Protective Coatings Corp.
- C. Isolatek International.
- D. Nelson Firestop Products.
- E. 3M Fire Protection Products.
- F. Tremco.

2.2 STOPPING, GENERAL

- A. Compatibility: Provide through-penetration firestop systems that are listed and approved by governing authorities. Materials shall be compatible with one another, with the substrates forming openings, and with the items, if any, penetrating through-penetration firestop systems, under conditions of service and application, as demonstrated by through-penetration firestop system manufacturer based on testing and field experience.
- B. Accessories: Provide components for each through-penetration firestop system that are needed to install fill materials and to comply with "Performance Requirements" Article. Use only components specified by through-penetration firestop system manufacturer and approved by the qualified testing and inspecting agency for firestop systems indicated. Accessories include, but are not limited to, the following items:
 - 1. Permanent forming/damming/backing materials, including the following:
 - a. Slag-/rock-wool-fiber insulation.
 - b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
 - c. Fire-rated form board.
 - d. Fillers for sealants.
 - 2. Temporary forming materials.
 - 3. Substrate primers.
 - 4. Collars.
 - 5. Steel sleeves.
- C. Identification Tags: Provide permanent adhesive tags, professionally prepared, that show the UL assembly number, the date of installation, name of the installer, and the name of the company doing the installing.

2.3 MATERIALS

- A. General: Provide through-penetration firestop systems containing the types of fill materials indicated in the Through-Penetration Firestop System Schedule at the end of Part 3 by reference to the types of materials described in this Article. Fill materials are those referred to in directories of the referenced testing and inspecting agencies as fill, void, or cavity materials.
- B. Cast-in-Place Firestop Devices: Factory-assembled devices for use in cast-in-place concrete floors and consisting of an outer metallic sleeve lined with an intumescent strip, a radial extended flange attached to one end of the sleeve for fastening to concrete formwork, and a neoprene gasket.
- C. Latex Sealants: Single-component latex formulations that after cure do not re-emulsify during exposure to moisture.
- D. Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrant.
- E. Intumescent Composite Sheets: Rigid panels consisting of aluminum-foil-faced elastomeric sheet bonded to galvanized steel sheet.
- F. Intumescent Putties: Nonhardening dielectric, water-resistant putties containing no solvents, inorganic fibers, or silicone compounds.
- G. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.
- H. Mortars: Prepackaged, dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar.
- I. Pillows/Bags: Reusable, heat-expanding pillows/bags consisting of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents and fire-retardant additives.
- J. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.
- K. Silicone Sealants: Moisture-curing, single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below:
 - 6. Grade for Horizontal Surfaces: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces.
 - 7. Grade for Vertical Surfaces: Nonsag formulation for openings in vertical and other surfaces.

2.4 CONSTRUCTION GAP FIRESTOPPING

- A. The following products are acceptable for use in firestopping the type construction gaps listed in the summary of this specification and indicated on the Drawings:
1. FireDam Spray by 3-M or a reviewed substitute by Hilti, Nelson Fire Stop Products, or Tremco and acceptable to the South Carolina Department of Education for firestopping construction gaps.
 2. Mineral Wool: When required as a component in construction with the firestopping material, provide fire-resistant mineral wool as recommended by the firestopping manufacturer and acceptable to the governing authorities.
 3. Damming Material: As recommended by the firestopping manufacturer.

2.5 MIXING

- A. For those products requiring mixing before application, comply with through-penetration firestop system manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning: Clean out openings immediately before installing through-penetration firestop systems to comply with written recommendations of firestop system manufacturer and the following requirements:
1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of through-penetration firestop systems.
 2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with through-penetration firestop systems. Remove loose particles remaining from cleaning operation.
 3. Remove laitance and form-release agents from concrete.

- B. Priming: Prime substrates where recommended in writing by through-penetration firestop system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
- C. Masking Tape: Use masking tape to prevent through-penetration firestop systems from contacting adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestop system materials. Remove tape as soon as possible without disturbing firestop system's seal with substrates.

3.3 THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION

- A. General: Install through-penetration firestop systems to comply with "Performance Requirements" Article and firestop system manufacturer's written installation instructions and published drawings for products and applications indicated.
 - 1. Select applicable and suitable specified firestopping materials that are recommended by the firestopping manufacturer for each intended application regarding moisture and movement conditions.
- B. Install fireproofing using materials and methods to comply with requirements of UL and local governing authorities. Where specific UL assembly numbers are indicated on the Drawings, install firestopping materials to comply with the indicated assembly numbers.
- C. Install forming/damming/backing materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
 - 1. After installing fill materials, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.
- D. Install fill materials for firestop systems by proven techniques to produce the following results:
 - 1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.
 - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 - 3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.
- E. Identification Tags: Complete a proper identification tag for each installation and install the tag to identify the system. Print all information clearly and legibly.

3.4 FIELD QUALITY CONTROL

- A. Coordinate with the selected testing agency for required sampling and testing. Arrange for testing as required by the testing agency. Inspecting agency will state in each report whether inspected through-penetration firestop systems comply with or deviate from requirements.
- B. Proceed with enclosing through-penetration firestop systems with other construction only after inspection reports are issued.
- C. Where deficiencies are found, repair or replace through-penetration firestop systems so they comply with requirements.

3.5 IDENTIFICATION

- A. Identify through-penetration firestop systems with pressure-sensitive, self-adhesive, preprinted vinyl labels. Attach labels permanently to surfaces of penetrated construction on both sides of each firestop system installation where labels will be visible to anyone seeking to remove penetrating items or firestop systems. Include the following information on labels:
 - 1. The words: "Warning--Through-Penetration Firestop System--Do Not Disturb. Notify Building Management of Any Damage."
 - 2. Contractor's name, address, and phone number.
 - 3. Through-penetration firestop system designation of applicable testing and inspecting agency.
 - 4. Date of installation.
 - 5. Through-penetration firestop system manufacturer's name.
 - 6. Installer's name.

3.6 CONSTRUCTION GAP FIRE-STOPPING

- A. Install fire stopping in construction gaps, separations, joints, created between
 - 1. Edges of floor slabs and exterior wall construction.
 - 2. Tops of partitions and underside of structural systems.
 - 3. Tops of partitions and underside of ceilings or ceiling assemblies.
 - 1. Control joints in masonry partitions.
 - 2. Different constructions materials such as but not limited to CMU and drywall and similar type construction.
- B. When required by the manufacturer, install damming material and fire safing according to the manufacturer's instructions.
- C. Remove damming material after firestopping has cured.

3.7 CLEANING AND PROTECTION

- A. Clean off excess fill materials adjacent to openings as Work progresses by methods and with cleaning materials that are approved in writing by through-penetration firestop system manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure through-penetration firestop systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated through-penetration firestop systems immediately and install new materials to produce through-penetration firestop systems complying with specified requirements.

END OF SECTION 07 84 00

SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes interior sealants.

1.3 SYSTEM PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that have been produced and installed to establish and to maintain watertight continuous seals without causing staining or deterioration of joint substrates.
 - 1. Failure of installed sealants includes, but is not limited to, the following:
 - a. Adhesive failure.
 - b. Cohesive failure.
 - c. Puncture failure.
 - d. Surface chalking.
 - e. Surface color change.
 - f. Staining of adjacent surfaces.
 - g. Surface crazing greater than 3 mils deep.

1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data from manufacturers for each joint sealant product required.
- C. Samples for verification purposes of each type and color of joint sealant required. Install joint sealant samples in 1/2-inch wide joints formed between two 6-inch long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

- D. Certificates from manufacturers of joint sealants attesting that their products comply with specification requirements and are suitable for the use indicated.
- E. Product test reports for each type of joint sealants indicated, evidencing compliance with requirements specified.
- F. Manufacturer's Guarantee: Furnish sealant manufacturer's guarantee against non-performance of sealant as listed under Warranties. Guarantee shall include materials and labor for the following minimum periods:

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has completed joint sealant applications similar in material, design, and extent to that indicated for Project that have resulted in construction with a record of successful in-service performance.
- B. Single Source Responsibility for Joint Sealant Materials: Obtain joint sealant materials from a single manufacturer for each different product required.
 - 1. Testing will not be required when joint sealant manufacturer is able to submit joint preparation data required above that are acceptable to Architect and are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.
- C. Product Testing: Provide comprehensive test data for each type of joint sealant based on tests conducted by a qualified independent testing laboratory on current product formulations within a 24-month period preceding date of Contractor's submittal of test results to Architect.
 - 1. Test elastomeric sealants for compliance with requirements specified by reference to ASTM C 920. Include test results for hardness, stain resistance, adhesion and cohesion under cyclic movement (per ASTM C 719), low-temperature flexibility, modulus of elasticity at 100 percent strain, effects of heat aging, and effects of accelerated weathering.
 - 2. Arrange for all adhesion and other testing required by the sealant manufacturer for compliance with specified warranty requirements.
- D. Substitute Requests For A Specified Entity
 - 1. Provisions, requirements, and stipulations stated under this paragraph of this specification apply not only to this specification, but they also apply to all other specifications that are included in the project manual, on the drawings or are otherwise a part of the Contract Documents even if not so stated in these documents. Information requested under this paragraph heading is the minimum required information for consideration and evaluation and additional information may be requested. This information is required in addition to information required by any substitute request

- forms that may be included in the Project Manual or Contract Documents, or otherwise provided.
2. Where the Contract Documents list at least three entities (products, materials, components, systems, manufacturers, installers, methods, etc.), the Architect reserves the option to reject any and all requests for a substitute. Where the Contract Documents list only one entity without “Or equal” or similar language, substitutes will not be considered. Where the Contract Documents list less than 3 entities, substitutes may be reviewed and evaluated on an individual base.
 3. Include the following information on the cover page of the request:
 - a. Name of Project and project number as shown in the header of the specification
 - b. Date request is being made.
 - c. Name of person, company, and contact information of person requesting substitute.
 - d. Specification title and number and drawing number where the specified product is listed or shown.
 - e. Exact name of the specified entity and substitute entity. .
 4. When requesting a substitute, include all requested and required supporting data, specifications, and performance criteria. The Architect must receive this substitute request no later than the time stated elsewhere for submitting product substitutions. If no time is stated, then 10 days prior to date of bid opening. When a Request For Substitute Form is included in the Project Manual, properly complete the form and include it with the submittal.
 5. Verbal requests for a substitute or requests that do not comply with these provisions are not acceptable, will be rejected, and will not extend the submittal deadline. Submittals that are incomplete have vague or unspecific answers (“Better”. “Cheaper”. “More competitive”, etc.); that lack supporting data to substantiate equal or superior quality/design; that do not include the requested proof, verification, reports, and substantiating documentation; or are received after submittal deadline will be rejected. Provide convincing answers as to why the substitute should be approved. Rejection or disapproval will not extend the submittal deadline.
 - a. If the substitute entity differs from specified entity, compare the substitute entity with the specified entity in a tabular format that clearly shows all the differences.
 6. Include the following information on all requests for substitutes:
 - a. Length of time the manufacturer has been in business.
 - b. Whether the manufacturer operated under any other name, and if so, under what name and when?
 - c. Length of time the substitute entity has been on the market.
 - d. Whether the substitute entity has been marketed under any other name, and if so, under what name and when?
 - e. Who will install and service the substitute entity?

- f. Whether the installer is trained and certified by the manufacturer? If so, describe how this training and certification are achieved and if training records are maintained?
 - g. All required changes in the project design that will be required to incorporate the substitute entity.
 - h. Describe any known problems or failures associated with the substitute entity? If there are any, provide details.
7. The manufacturer's published literature, description, capabilities, operating and performance parameters, options, accessories, etc. of all submitted substitutes shall meet or exceed those published by the manufacturer of the specified entity even if they are not specifically mentioned in the Contract Documents. Additionally, manufacturers whose standards are less than those of the specified entity but are capable of producing an entity that meets the specified entity shall not, for the convenience of their normal production methods, vary from the specified entity standards.
8. Where test data and standards are being submitted as supporting data and for comparison with the specified item, comply with the following requirements. Submittals not complying with these provisions will be considered incomplete, unacceptable, and will be rejected:
 - a. All substitutes shall meet all of the minimum performance criteria of the specified entity.
 - b. Submit certified data provided by an independent testing laboratory.
 - c. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria and denoting the differences between the specified item the substitute item.
 - d. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item.
 - e. Where a performance criterion is not listed in the specifications, comply with the specified product manufacturer's published data for performance criteria.
 - f. Where the specified entity requires certifications, registrations, approvals, policies, practices, etc., submit proof that the substitute entity is in compliance.
9. Each and all requests for substitutes shall be signed by the person making the submittal. By signing the submittal, the person requesting the substitute certifies and agrees to the following requirements. Requests without the signature of a responsible person will be rejected.
 - a. That the specifications have been read and are understood,
 - b. That the entity being submitted meets or exceeds all provisions of the specifications,
 - c. That all submitted information is true and accurate,
 - d. Will remove the substitute entity and replace it with an acceptable product, at his expense, if it is determined that the substitute does not meet the specifications as certified.
 - e. Agrees to pay for all necessary design changes and increased construction costs to incorporate the substitute entity.

1.6 PROJECT CONDITIONS

- A. Environmental Conditions: Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealant manufacturer or when joint substrates are wet.
- B. Joint Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than or greater than allowed by joint sealant manufacturer for application indicated, or where joint-width ratio is not as recommended by the sealant manufacturer.
- C. Joint Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with their adhesion are removed from joint substrates.

1.7 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: **Two** years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period from date of Substantial Completion as follows:
 - 1. All Silicone Sealants: 20 years.
- C. Failure of any one of combination of criteria listed in Performance Requirements during the warranty period will be considered non-performance. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
 - 1 Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
 - 2 Disintegration of joint substrates from natural causes exceeding design specifications.
 - 3 Mechanical damage caused by individuals, tools, or other outside agents.
 - 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backer, joint fillers, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- B. Colors: Provide color of exposed joint sealants to comply with selections made by Architect from manufacturer's full range of standard colors for products of type indicated.
- C. VOC Content of Interior Sealants: Provide all sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - 1. Architectural Sealants: 250 g/L.

2.2 ELASTOMERIC JOINT SEALANTS

- A. The following sealants are referenced in the Sealant Schedule at the end of this Section:
 - 1. Silicone:
 - a. Sealant S1: White, mildew resistant. Provide one of the following or reviewed substitute:
 - 1. Dow Corning 994
 - 2. Dow Corning 786 Mildew resistant
 - 3. General Electric 1700
 - 4. Pecora 898
 - 5. Tremco Tremsil 600
 - b. Sealant S2: General Building, ASTM C920. Provide one of the following or reviewed substitute:
 - 1. Dow Corning 795
 - 2. Dow Corning 756 SMS
 - 3. General Electric Silpruf
 - 4. Pecora 864
 - 5. Tremco Spectrem 2 or Spectrem 3
 - c. Sealant S3: Perimeter sealing, ASTM C920: Provide one of the following or a reviewed substitute:
 - 1. Dow Corning 790
 - 2. Dow Corning 756 SMS
 - 3. Pecora 890

4 Tremco Spectrem 1

2. Acoustical Sealant:

- a. Sealant A1: Provide the following or reviewed substitute:
 - 1. Pecora BA-98 or AC-20-FTR
 - 2. Tremco Acoustical Sealant

2.3 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming in any way joint substrates and adjacent nonporous surfaces, and formulated to promote optimum adhesion of sealants with joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint sealant performance. Do not proceed with installation of joint sealants until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with recommendations of joint sealant manufacturer and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), sealing

compound, sealers, old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Clean concrete, masonry, and similar porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
 3. Remove laitance and form release agents from concrete.
- B. Substrate Testing: Test masonry substrate for adhesion and staining.
- C. Joint Priming: Prime joint substrates where recommended by joint sealant manufacturer based on preconstruction joint sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's recommendations. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.
- D. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint sealant manufacturer's printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at the same time sealant backings are installed.
1. Install appropriate and correct sealant in all junctures such as joints, seams, terminations, intersections, formed by entities such as a material, product, component, system, or equipment when the manufacture of the entity does not provide closures for a juncture items. Sealant shall be installed at both like and unlike entities.
- D. Install sealant free of air pockets, foreign embedded matter, ridges and sags.
- E. Tooling

1. Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform surface.
2. Tool sealant surface to configuration recommended by the sealant manufacture for the intended application.
3. Ensure that all air pockets are eliminated.
4. Ensure that sealant has full contact and adhesion with sides of joint.
5. Remove excess sealants from surfaces adjacent to joint.
6. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

3.4 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so that installations with repaired areas are indistinguishable from original work.

3.6 RE-CAULKING EXISTING JOINTS

- A. Where joints identified by the Owner and Architect are to be re-caulked, perform the following:
 1. Remove all existing sealant, calking, and backing material.
 2. Remove all debris, dirt, grime, grease, soil, loose material, etc down to clean natural substrate
 3. Install applicable sealant according to the sealant schedule.
 4. Comply with all applicable provisions of these specifications and the respective manufacturer's instructions.

SEALANT SCHEDULE

Scheduled sealants are specified under materials. Sealant applications are not limited to the following scheduled.

INTERIOR APPLICATIONS

APPLICATION	SEALANT
Perimeter of Wall Openings	S1
All terminations of wall intersections	S1
Exposed Central Joints on Drywall	S2
General Use, Joints not Subject to Movement	L1, S1 or S2
Acoustical Walls and Ceilings	A1

END OF SECTION 07 92 00

SECTION 08 12 13 – HOLLOW METAL FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes
 - 1. Labeled hollow metal frames
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 08 Section "Flush Wood Doors" for hollow-core and solid-core wood doors installed in steel doorframes.
 - 2. Division 08 Section "Door Hardware" for door hardware and weatherstripping.
 - 3. Division 09 Section "Painting" for field painting primed doorframes.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 01 Specification Sections.
- B. Product Data for each type of frame specified, including details of construction, materials, dimensions, hardware preparation, core, label compliance, sound ratings, profiles, and finishes.
- C. Shop Drawings showing fabrication and installation of doorframes. Include details of each frame type, conditions at openings, details of construction, location and installation requirements of frame hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.
 - 1. Details of moldings, removable stops, and glazing
- D. Frame Schedule: Submit schedule of doorframes using same reference numbers for details and openings as those on Contract Drawings.
 - 1. Indicate coordination of glazing doorframes and stops with glass and glazing requirements.

- E. Samples for initial selection in the form of manufacturer's color charts showing the full range of colors available for factory-finished doorframes.
- F. Samples for verification of each type of exposed finish required, prepared on Samples not less than 3 by 5 inches and of same thickness and material indicated for final unit of Work. Where finishes involve normal color and texture variations, include Sample sets showing the full range of variations expected.

1.4 QUALITY ASSURANCE

- A. Provide doorframes complying with ANSI/SDI 100 "Recommended Specifications for Standard Steel Doors and Frames" and as specified.
- B. Fire-Rated Assemblies: Units that comply with NFPA 80, are identical to frame assemblies tested for fire-test-response characteristics per ASTM E 152, and are labeled and listed by UL, Warnock Hersey, or another testing and inspecting agency acceptable to authorities having jurisdiction.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver doorframes cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory-finished door frames.
- B. Inspect doorframes on delivery for damage. Minor damages may be repaired provided refinished items match new work and are acceptable to Architect; otherwise, remove and replace damaged items as directed.
- C. Store door frames at building site under cover. Place units on minimum 4-inch-high wood blocking. Avoid using nonvented plastic or canvas shelters that could create a humidity chamber. If cardboard wrappers become wet, remove cartons immediately. Provide minimum 1/4-inch spaces between stacked doorframes to promote air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Steel Door frames:
 - a. Amweld Building Products, Inc.

- b. Ceco Door Products.
- c. Curries Co.
- d. D & D Specialties
- e. Mesker
- f. Pioneer Industries.
- g. Palmetto Wholesale Company
- h. Steelcraft

2.2 MATERIALS

- A. Cold-Rolled Steel Sheets: Carbon steel complying with ASTM A 366, commercial quality, or ASTM A 620, drawing quality, special killed.
- B. Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A 526 , or drawing quality, ASTM A 642, hot dipped galvanized in accordance with ASTM A 525, with A60 or G60 coating designation, mill phosphatized.
- C. Shop Applied Paint: Apply after fabrication.
 - 1. Primer: Rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints complying with ANSI A250.10.
 - 2. Finish: Manufacturer's standard baked-on enamel paint.
- D. Supports and Anchors: Fabricated from not less than 0.0478-inch-thick steel sheet; 0.0516-inch-thick galvanized steel where used with galvanized steel door frames. Fabricate to size and shape for wall construction.
- E. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where items are to be built into exterior walls, hot-dip galvanize complying with ASTM A 153, Class C or D as applicable.
- F. Glazing: Comply with requirements in Division 8 Section "Glazing."

2.3 DOOR FRAMES

- A. Provide metal door frames for wood doors, transoms, sidelights, and other openings, according to ANSI/SDI 100, and of types and styles as shown on Drawings and schedules. Conceal fastenings, unless otherwise indicated. Fabricate doorframes of minimum 16 Gauge (0.0568 inch) thick cold-rolled steel sheet. Galvanize exterior doorframes.
 - 1. Fabricate doorframes with mitered or coped and continuously welded corners.
 - 2. Labeled Doorframes: Construct according to UL and local governing requirements for the scheduled label. Factory-attach UL label that states the applicable UL rating. Door

frames without the appropriate UL label will not be accepted. All labels shall be metallic.

3. Provide doorframes with a minimum three 18-ga. steel or 3/16-inch wire anchors per jamb. Provide minimum 18 ga. floor anchors.
 4. Interior: Ungalvanized, primes steel
 5. Mullions: Where mullions are scheduled or detailed on the drawings or plans, or specified in the hardware sets in Section 08710, or are required for proper operation, provide the proper hollow metal mullion with same label as the doors. Mullions shall be key removable when available and shall operate with the door hardware specified in Section 08710. Coordinate with the door hardware in Section 08710.
- B. Door Silencers: Except on weatherstripped door frames, drill stops to receive 3 silencers on strike jambs of single-door frames and 2 silencers on heads of double-door frames.
- C. Plaster Guards: Provide minimum 0.0179-inch-thick steel plaster guards or mortar boxes at back of hardware cutouts where mortar or other materials might obstruct hardware operation and to close off interior of openings.
- D. Grout: When required in masonry construction, as specified in Division 4 Section "Unit Masonry."

2.4 FABRICATION

- A. Fabricate steel frame units to be rigid, neat in appearance, and free from defects, warp, or buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site. Comply with ANSI/SDI 100 requirements.
- B. Tolerances: Comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."
- C. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.
- F. Hardware Preparation: Prepare doorframes to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements of SDI 107 and ANSI A115 Series specifications for frame preparation for hardware.
- G. Reinforce doorframes to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site. Expanded or extruded metal screw holes are not acceptable for reinforcement or for providing bearing surface for threads.

- H. Locate hardware as indicated on Shop Drawings or, if not indicated, according to the Door and Hardware Institute's (DHI) "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."

2.5 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual" for recommendations relative to applying and designating finishes.
- B. Comply with SSPC-PA 1, "Paint Application Specification No. 1," for steel sheet finishes.
- C. Apply primers and organic finishes to doors and door frames after fabrication.

2.6 STEEL SHEET FINISHES

- A. Surface Preparation: Solvent-clean surfaces to comply with SSPC-SP 1 to remove dirt, oil, grease, and other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel to comply with SSPC-SP 5 (White Metal Blast Cleaning) or SSPC-SP 8 (Pickling).
- B. Pretreatment: Immediately after surface preparation, apply a conversion coating of type suited to organic coating applied over it.
- C. Factory Priming for Field-Painted Finish: Apply shop primer that complies with ANSI A250.10 acceptance criteria, is compatible with finish paint systems indicated, and has capability to provide a sound foundation for field-applied topcoats. Apply primer immediately after surface preparation and pretreatment.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install steel doorframes, and accessories according to Shop Drawings, manufacturer's data, and as specified.
- B. Placing Door frames: Comply with provisions of SDI 105, unless otherwise indicated. Set door frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.

1. In masonry construction, install at least 3 wall anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Acceptable anchors include masonry wire anchors and masonry T-shaped anchors.
2. At existing concrete or masonry construction, install at least 3 completed opening anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Set doorframes and secure to adjacent construction with bolts and masonry anchorage devices.
3. In metal-stud partitions, install at least 3 wall anchors per jamb at hinge and strike levels. In steel-stud partitions, attach wall anchors to studs with screws.
4. In in-place gypsum board partitions, install knock-down, slip-on, drywall door frames.
5. Install labeled doorframes according to UL, NFPA 80, and local governing requirements for labeled doors.
6. Check installation of frames with a device specifically made for setting and gauging alignment, width, square, plumb, pitch, and bow of doorframes such as a Frame Set gauge by PLS. Check these measurements frequently during installation as recommended by the gauge manufacturer.
 - a. Where frames are set prior to wall construction, coordinate wall construction so that the frame measurements are not disturbed during wall construction and that frames can be accurately anchored into the construction. Verify alignment, width, square, plumb, pitch, and bow during and after wall construction, and prior to door installation. Hollow metal and wood doors that do not perform correctly because of frame installation will be removed and frame installation corrected at no additional cost.

3.2 ADJUSTING AND CLEANING

- A. Prime Coat Touchup: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touchup of compatible air-drying primer.
- B. Protection Removal: Immediately before final inspection, remove protective wrappings from doorframes.

END OF SECTION 08 12 13

SECTION 08 14 16 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including the General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Solid core doors with wood veneer faces.
 - 2. Factory finishing of flush wood doors.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 08 Section "Hollow Metal Frames" for steel doorframes.
 - 2. Division 08 Section "Door Hardware" for coordination of preparation for hardware.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 01 Specification Sections.
- B. Product data for each type of door, including details of core and edge construction, trim for openings and louvers, and factory-finishing specifications.
 - 1. Warranty: Submit manufacturer's warranty for the type doors required for this project. Warranty shall show the warranty period for the each type door and door application required for this project.
- C. Shop drawings indicating location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, requirements for veneer matching and factory finishing and other pertinent data.
 - 1. Certify that doors have been satisfactorily tested for and meet all requirements for positive pressure door openings.
 - 2. For factory-machined doors, indicate dimensions and locations of cutouts for locksets and other cutouts adjacent to light openings.
- D. Samples for verification in the form and size indicated below:

1. Corner sections of doors approximately 12 inches square with door faces and edgings representing the typical range of color and grain for each species of veneer and solid lumber required. Finish sample with same materials proposed for factory-finished doors.
2. Frames for light openings, 6 inches long, for each material, type, and finish required.

1.4 QUALITY ASSURANCE

- A. Quality Standard: Comply with the following standard:
 1. AWI Quality Standard: "Architectural Woodwork Quality Standards" of the Architectural Woodwork Institute for grade of door, core, construction, finish, and other requirements.
- B. Fire-Rated Wood Doors: Provide wood doors that comply with NFPA 80; are identical in materials and construction to units tested in door and frame assemblies per ASTM E 152; and are labeled and listed by UL, Warnock Hersey, or another testing and inspection agency acceptable to authorities having jurisdiction.
 1. Positive Pressure: All doors shall have been satisfactorily tested for and meet all requirements for positive pressure door openings.
 2. Smoke Rating: Where drawings show or codes require a smoke door, provide doors that have been satisfactorily tested and have an approved label for the smoke rating.
- C. Single-Source Responsibility: Obtain doors from one source and by a single manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect doors during transit, storage, and handling to prevent damage, soiling, and deterioration. Comply with requirements of referenced standard and manufacturer's instructions.
- B. Identify each door with individual opening numbers as designated on shop drawings, using temporary, removable, or concealed markings.
- C. Manufacturer's Identification Label: Factory-install identification label on top rail of each door. As a minimum, label shall contain the following coded information: Job name, job order number, bar code serial number, door number, door width, door height, door thickness, bevel code hinge and lock stile, door type, fire rating, lite cutout size, door swing, lock type, sequence matching, face material by color code for hinge face and stop face. All labels shall be metallic.

1.6 PROJECT CONDITIONS

- A. Conditioning: The moisture content of wood doors at time of delivery and that is to be installed in a conditioned space shall be 6-8 percent. However, based on design operating parameters of the conditioned space and wood moisture equilibrium tables published by the United States Department of Agriculture/United States Forestry Department, the moisture

content at time of delivery shall be as such so that the wood moisture content does not change more than 2 percent after installation. Wood doors that are exposed to unacceptable storage conditions prior to installation shall be removed and replaced with new doors. Warping, delaminated finishes, sticking, or moisture levels exceeding 12 percent are indicative of improper storage or exposure to moisture. :

1.7 WARRANTY

- A. General Warranty: Door manufacturer's warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Door Manufacturer's Warranty: Submit written agreement on door manufacturer's standard form signed by manufacturer, Installer, and Contractor, agreeing to repair or replace defective doors that have warped (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section or that show telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span, or do not conform to tolerance limitations of referenced quality standards.
 - 1. If the manufacturer's warranty begins on the date of shipment, the Contractor, shall provide a gap warranty to cover the balance of the specified warranty period.
 - 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors where defect was not apparent prior to hanging.
 - 3. Warranty shall be in effect during the following period of time after date of Substantial Completion.
 - a. Solid Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

- A. Manufacturers: Subject to compliance with requirements, provide doors by one of the following to match design type, and finish, of what was on replaced:
 - 1. Algoma Hardwoods Inc.
 - 2. Eggers Industries, Architectural Door Division.
 - 3. Graham
 - 4. Marshfield Door Systems
 - 5. Oshkosh Architectural Door Company
 - 6. VT Industries

2.2 INTERIOR FLUSH WOOD DOORS

- A. Solid Core Doors for Transparent Finish: Comply with the following requirements:
 - 1. Faces: Species, grain, and cut to match what was on replaced
 - 2. Grade: Custom.

3. Construction: 5 plies, hot press method with waterproof glue. Construct doors of all solid wood materials.
4. Core: Structural composite or Glued-block (staved) core. Incorporation of OSB, particleboard, similar materials, etc. is not acceptable. Core shall provide the following per independent testing laboratory results:
 - a. Face Screw Withdrawal per NWWDA, TM IO: 965 pounds average
 - b. Moisture Content after 2 Hours Submersion per ASTM D1037: 11.3 percent
 - c. Thickness After Swelling per ASTM D103: 0.3 percent
 - d. Door Impact Test per ASTM F476 Grade 40: Passed
 - e. Core shall have no added urea formaldehyde

B. Fire-Rated Solid Core Doors: Comply with the following requirements:

1. Faces and Grade: Provide faces and grade to match non-fire-rated doors in same area of building, unless otherwise indicated.
2. Construction: Manufacturer's standard core construction as required to provide fire-resistance rating indicated. Core shall have no added urea formaldehyde.
3. Blocking: Provide composite blocking designed to maintain fire resistance of door but with improved screw-holding capability of same thickness as core and with minimum dimensions as follows:
 - a. 5-inch top rail blocking.
 - b. 5-inch bottom rail blocking.
 - c. 5-by-18-inch lock blocks.
 - d. 5-inch midrail blocking.
4. Edge Construction: Provide manufacturer's standard laminated-edge construction for improved screw-holding capability and split resistance as compared to edges composed of a single layer of treated lumber.
5. Pairs
 - a. Labeled wood doors shall have been designed, manufactured and tested in compliance with GP Specifications and shall be approved for use in up to 90-minute openings when used with center and top latch exit devices. The door assemblies be suitable for use with thermal pins, and the wood doors shall not require a metal edge strip to achieve the scheduled label when used with the described exit device. Factory-install applicable label from the testing laboratory.
 - b. Provide fire-rated pairs with fire-retardant stiles that are labeled and listed for kinds of applications indicated without formed-steel edges and astragals.
5. Positive Pressure: Provide doors with intumescent positive pressure sealing mechanism concealed in the door edge and at the meeting stile at pairs of doors. Sealing mechanism shall not be visible or susceptible to vandalism or other tampering. Sealing shall be acceptable to local governing authorities as required by UBC-7-2-1997 and UL 10C. Testing shall have been done by a third party testing agency acceptable to applicable governing authorities. Doors shall be compatible with the door hardware specified in Division 08 section – Door Hardware for a complete and approved positive pressure system. Surface applied positive pressure mechanisms to the doorframe or that are visible are not acceptable.
7. Factory-Applied Labels

- a. Where doors are scheduled to be labeled, factory-apply both the “S” label for smoke assembly that complies with requirements of UL 1784 and the fire label. The smoke assembly designation label shall be installed on labeled doors even if the labeled door is not in a smoke assembly.
- b. Where doors are scheduled for use in a smoke assembly but are not labeled, factory-apply the “S” label for smoke assembly that complies with requirements of UL 1784.
- c. Applicable smoke gasketing will be specified in the Door Hardware specification and will be field applied.

2.3 FABRICATION

- A. Fabricate flush wood doors to comply with following requirements:
 1. In sizes indicated for job-site fitting.
 2. Use proper templates from specific hardware manufacturer. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame shop drawings, DHI A115-W series standards, and hardware templates.
 - a. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before proceeding with factory machining.
 - b. Install edging before face veneers.
 - c. Provide 1/4 inch edging of same wood species as face veneer to match face veneer.
 - d. Install buttons approximately 1/4 inch high along the bottom of the door to keep bottom off floor when handling door in vertical manner.
 - c. Prior to factory finishing, seal tops, bottoms, edges, and all cut-outs and pilot holes, of all doors with manufacturer’s standard water-resistant sealer to prevent moisture infiltration. Sealer shall be compatible with factory-applied finish. Sealing shall be factory applied regardless of manufacturing process. Unsealed doors are not acceptable and will be rejected and returned to the manufacture.
 3. Top Rail: Coordinate the height of the top rail with the base of the door closers specified in Division 08 Section Door Hardware to ensure closers will mount on the door top without a drop plate or closer modification. Where doors have lite openings, allow for additional rail height for lite kit frames.

2.4 FACTORY FINISHING

- A. General: Comply with referenced quality standard's requirements for factory finishing.
- B. Finish wood doors at factory.
- C. Transparent Finish: Comply with requirements indicated for grade, finish system, staining effect, and sheen.
 1. Grade: AWI Premium.

2. Finish: Manufacturer's finish with performance requirements comparable to either AWI System TR-2 catalyzed lacquer or AWI System TR-4 conversion varnish. Color and gloss to match what was on replaced doors.

2.5 TOLERANCES

- A. Wood Door tolerances for 1-3/4 solid core pre-fit wood doors. Manufacturer's tolerances shall apply if more stringent than those specified.
 1. Width: 1/32 inch.
 2. Height: 1/16 inch.
 3. Thickness: 1/16 inch.
 4. Hardware Location: 1/32 inch.
 5. Locks and Hinges: 1/32 inch.
 6. Squareness Tolerance: Diagonal measurement difference not to exceed 1/8 inch.
 7. Warp Tolerance: 1/4 inch in any 42 inch by 84 inch section of the door.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine installed doorframes prior to hanging door:
 1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb jambs and level heads.
 2. Reject doors with defects.
- B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Division 08 Section "Door Hardware."
- B. Manufacturer's Instructions: Install wood doors to comply with manufacturer's instructions and referenced quality standard and as indicated.
 1. Install fire-rated doors in corresponding fire-rated frames according to requirements of NFPA 80.
- C. Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted with fire-rated doors. Machine doors for hardware. Seal cut surfaces after fitting and machining.

1. Fitting Clearances for Non-Fire-Rated Doors: Provide 1/8 inch at jambs and heads, 1/16 inch per leaf at meeting stiles for pairs of doors. Where doors are not scheduled for undercutting for ventilation, provide 1/8 inch clearance from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4-inch clearance from bottom of door to top of threshold.
 2. Fitting Clearances for Fire-Rated Doors: Comply with NFPA 80.
 3. Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges.
 4. Bevel fire-rated doors 1/8 inch in 2 inches on lock edge; trim stiles and rails only to extent permitted by labeling agency.
- D. Factory-Finished Doors: Restore finish before installation, if fitting or machining is required at the job site.

3.3 ADJUSTING AND PROTECTION

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Refinish or replace doors damaged during installation.
- C. Protect doors as recommended by door manufacturer to ensure that wood doors will be without damage or deterioration at the time of Substantial Completion.
 1. Reseal edges, including tops and bottoms, that are disturbed during fitting and adjusting.

END OF SECTION 08 14 16

SECTION 08 71 00 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes items known commercially as finish or door hardware that are required for the new doors that will replace existing doors during elevator modernizing.
 - 1. New hardware must match design, style, finish, and function of existing hardware. Prior to submitting prices, the Contractor and hardware supplier shall examine the existing facility and compare existing conditions with these specifications for consistency and uniformity toward meeting that objective. Failure to bring deviations or variances between these specifications and the existing conditions to the Architect's attention may result in replacing unmatching hardware with acceptable hardware at no additional cost.

- D. Related Sections: The following Sections contain requirements that relate to this Section:

- 1. Division 08 Section "Hollow Metal Frames" for silencers integral with hollow metal frames.
- 2. Division 08 Section "Flush Wood Doors" for coordination.

- E. Contractor's Investigation: Prior to Contract Execution, the Contractor shall have thoroughly investigated the entities such as employees, consultants, subcontractors, manufacturers, suppliers, etc. and other entities that will performing work or supplying materials, products, equipment, or systems for this project to ensure that they meet all of the qualifications and requirements mentioned or implied in the Contract Documents. If it is later determined that any of the previously mentioned entities do not meet the qualifications and requirements specified in the Contract Documents, the Contractor will be required to replace that entity with a qualified entity at no increase in Contract sum or Contract Time.

1.3 QUALITY CONTROL

- A. Selection and Ordering: Furnish door hardware as selected by Architect and in such quantities as provided for under other general provisions of the Contract.

- B. Door hardware supplier's responsibilities:

- 1. Review plans, details, schedules, and specifications and inform the Architect, prior to submitting prices or bids, of all noted errors, omissions, and conflicts and inconsistencies between the documents and for compliance with applicable codes and regulations. Contact the Architect for interpretation. Errors, omissions, inconsistencies, and non-

compliance brought to the Architect's attention when the door hardware shop drawings are submitted may be interpreted as inadequate document review. Volunteer alternates for manufacturers not specified will not be considered.

2. Submittals: Submit through Contractor required product data, final hardware schedule, in vertical form, showing recommended hardware sets by door numbers, separate keying schedule, and samples as specified in this Section, unless otherwise indicated.
3. Coordination and Templates: Assist Contractor as required to coordinate hardware with other work in respect to both fabrication and installation. Furnish Contractor with templates and deliver hardware to proper locations.
4. Product Handling: Package, identify, deliver, and inventory door hardware specified in this Section.
5. Discrepancies: Based on requirements indicated in Contract Documents in effect at time of door hardware selection, furnish types, finishes, and quantities of door hardware, including fasteners, and Owner's maintenance tools required to comply with specified requirements and as needed to install and maintain hardware. Furnish or replace any items of door hardware resulting from shortages and incorrect items at no cost to the Owner or Contractor. Obtain signed receipts from Contractor for all delivered materials.
6. Prior to ordering door hardware, the hardware supplier shall visit the project site with the Contractor to verify and certify the following and shall issue a letter of certification to the Architect Owner.
 - a. Architects intentions have correctly interpreted and understood
 - b. Door hardware has been correctly specified
 - c. Hardware to be ordered is properly coordinated with requirements of each door opening. Verify that each door hardware item is compatible with and will operate properly with door swing, door handing, frames, door construction, building obstructions, room function, and code and occupancy requirements.
 - d. Hardware to be ordered will operate properly and as intended and required with each door.
7. After receipt of door hardware and prior to installation, confirm that the received hardware is the proper hardware for each door.
8. Hardware supplier shall conduct a keying conference with the Owner, Contractor, and Architect to obtain approval of keying schedule. As a result of this meeting, the hardware contractor shall set up and implement a key control system that is subject to Owner's approval.

C. Contractor's responsibilities shall be as follows:

1. Submittals: Coordinate and process submittals for door hardware in same manner as submittals for other work.

2. Coordination:
 - a. Coordinate door hardware with other Work. Furnish hardware supplier or manufacturer with shop drawings of other work where required or requested. Verify completeness and suitability of hardware with supplier.
 - b. Coordinate door hardware in this section with the aluminum doors and entrances to ensure that installed door hardware results in a completed installation that, as a minimum, provides doors and entrances that meet the criteria listed under Adjusting and Cleaning of the specification.
3. Product Handling: Provide secure lock-up for hardware delivered to the site. Inventory hardware jointly with representative of hardware supplier and issue signed receipts for all delivered materials.
4. Installation Information: The general types and approximate quantities of hardware required for this Project are indicated at the end of this Section in order to establish Contractor's costs for installation and other work.
5. No adjustments in Contract sum will be made for subsequent increases or decreases in quantity of one or more hardware types that do not exceed 5 percent.
6. Select an experienced, competent, conscientious hardware installer that is approved by and acceptable to the various and applicable door hardware supplier that meets criteria established under Quality Assurance.

D. Coordination:

1. Coordinate the product provisions and requirements listed in PART 2 – PRODUCTS of this specification with the actual products stated in the hardware sets listed at the end of this Specification.
2. Ensure that each specified item is complete with necessary accessories, appurtenances, and provisions, including electrical, to ensure complete and proper operation of the product or system.
3. Bring all errors, conflicts within the specification, deficiencies, missing provisions in the specifications, delivery problems, and products no longer available to the Architect's attention during the Bidding Phase so that a clarification can be made. Failure to do so may be interpreted as an incomplete review of the specifications.

1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification sections. Submittals without the required and requested information and prepared in the requested format will be rejected and returned to the Contractor.
 1. Submit, with shop drawings, product data including manufacturer's cut sheets and technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements. **Clearly highlight each submitted item and data**

applicable to this project on manufacturer's cut sheets. Arrange the cut sheets in the order in which the item appears in the hardware sets.

2. Final hardware schedule, in vertical form, coordinated with doors, frames, and related work to ensure proper size, thickness, hand, function, labeling, and finish of door hardware. Submittals without the requested format will be rejected and returned.
 - a. Submittal shall include the following information:
 - 1) Type, style, function, size, and finish of each hardware item.
 - 2) Name and manufacturer of each item.
 - 3) Fastenings and other pertinent information.
 - 4) Location of each hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.
 - 5) Explanation of all abbreviations, symbols, and codes contained in schedule.
 - 6) Mounting locations for hardware.
 - 7) Door and frame sizes and materials.
 - 8) Copy of specified door closer guarantee
 - 9) Keying information.
 - 10) Labeling information, clearly shown for doors within the set.
 - 11) Submit on single side only. No 2-sided print.
 - 12) Include a clear and concise schedule of all numerical and alpha abbreviations, symbols, and designations with definitions for each type of hardware.
 - b. Final Hardware Schedule Content: Based on hardware indicated, organize schedule into "hardware sets" indicating complete designations of every item required for each door or opening. In each hardware heading/group/set, use the same complete nomenclature to describe a hardware item as is used in the specifications. **Do not just state "lockset 8237 or exit device 8804". State "Classroom Lockset 8237 or CVR exit device 8604".** As a minimum, each hardware set shall include the following information in a format similar to the following heading example. Submittals without this information will be returned un-reviewed:
 - 1.) Door size and thickness and configuration (single, pair, double egress)
 - 2.) Door and frame material
 - 3.) Door and Frame construction (wood, steel, aluminum)
 - 4.) Door Label (20 min, 30 min, 1 hr, etc)
 - 5.) Door number, and name and numbers of from and to rooms)
 - 6.) Required door hardware

HEADING #1

Opening Description – 3'6" x 7'0" HMD x HMF x 60 min.

- 1 Single Door 101 Conference Room 101 From Corridor 01
- 1 Single Door 216 Lounge 216 From Corridor 02
- 3 Butts, BB1199 x 5 x 4.5 x US32D
- 1 Closer
- 1 Classroom lock,
- 1 Stop

- 1 Kick plate
- 3 Silencers

c. Submittal Sequence:

- 1) Initial Draft: Submit initial draft of final schedule along with essential product data in order to facilitate the fabrication of other work that is critical in the Project construction schedule. Submit final schedule after samples, product data, coordination with shop drawings of other work, delivery schedules, and similar information has been completed and accepted.
- 2.) Final Schedule: Submit final schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work that is critical in the Project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by door hardware, and other information essential to the coordinated review of schedule.

d. Keying Schedule: Submit separate detailed schedule indicating clearly how the Owner's final instructions on keying of locks has been fulfilled.

e. Samples will be returned to the supplier. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated in the Work, within limitations of keying coordination requirements.

B. Templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Certification of Compliance:

1. Submit a statement from the manufacturer that electronic hardware and systems being supplied comply with the operational descriptions exactly as specified.
2. Submit a certification from the supplier that the correct hardware has been specified and installed.
3. Submit certification that supplied door hardware has been satisfactorily tested for and meet all requirements for positive pressure door openings.

1.5 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single manufacturer.

B. Supplier Qualifications: A recognized architectural door hardware supplier that has a record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that employs an experienced architectural hardware

consultant (AHC) who is available to Owner, Architect, and Contractor, at reasonable times during the course of the Work, for consultation.

1. The hardware supplier shall be either an authorized agent or authorized distributor of the primary door hardware (closers, locksets, exit devices), and be authorized to purchase primary door hardware directly from and have an established line of credit with the primary door hardware manufacturer. Submit a current letter of proof from the primary door hardware manufacturer.
 2. Require supplier to meet with Owner to finalize requirements and to obtain final instructions in writing. Coordinate and confirm with the Owner.
- C. All hardware used in labeled fire or smoke rated openings to be listed for those types of openings and bear the identifying label or mark indicating U.L. (Underwriter's Laboratories) approved for fire. Exit devices in non-labeled openings to be listed for panic.
1. Positive Pressure: All door hardware shall have been satisfactorily tested for and meet all requirements for positive pressure door openings.
- D. Review the enclosed bidding documents and inform the Architect of all noted errors, omissions, and inconsistencies between the documents and for compliance with applicable codes and regulations. Errors, omissions, inconsistencies, and non-compliance brought to the Architect's attention when the door hardware shop drawings are submitted may be interpreted as inadequate document review. Volunteer alternates for manufacturers not specified will not be considered.
- E. Installation of Door Hardware
1. The General Contractor shall conduct a pre-installation meeting with the installer, door hardware distributor, architect, and Owner.
 2. Door hardware may be installed either by the door hardware supplier or by an independent installer selected by the General Contractor or by the door hardware supplier. The aluminum entrance door manufacturer shall install and test applicable door hardware provided under this section. In either instance, the door hardware installer shall have the following qualifications:
 - a. Be recommended and approved by the door hardware supplier.
 - b. Be trained, approved, and certified by the manufacturers of the hinges, closers, locksets, and exit devices.
 - c. Provide certificates proving training, by the manufacturers of the door hardware being used on this hardware, in the proper use and installation of the types of door hardware to be installed on this project.
 - d. Attend a door hardware pre-installation conference conducted by the manufacturers of the hinges, closers, locksets, and exit devices.
 - e. Have successfully completed at least 3 projects of similar size and scope as this project within the last 12 months.
 - f. Provide references of completed projects.
 - g. The name of the proposed installer and installer's experience, approvals, and references shall be provided upon request.

- h. Prior to commencing installation, be able to produce a schedule showing start date and satisfactory completion dates of each area. Schedule shall include any priorities established and set by the Owner.
3. If an independent installer performs the installation, the hardware supplier shall:
 - a. Prior to commencing installation, produce a schedule showing start date and satisfactory completion dates of each area. Schedule shall include any priorities established and set by the Owner.
 - b. Monitor and inspect the in-progress installation of all door hardware and record all installation deficiencies and the corrective action taken.
 - c. Advise the Owner, Contractor, and the Architect of progress, delays, and potential problems along with applicable corrective recommendations.
 - d. Inspect the completed installation.
 - e. Prepare and submit to the General Contractor with copies to the Owner and Architect, a detailed door-by-door punch list noting all installation deficiencies that have been corrected and how the corrections were made.
4. If door hardware supplier performs the installation, they shall:
 - a. Prior to commencing installation, produce a schedule showing start date and satisfactory completion dates of each area. Schedule shall include any priorities established and set by the Owner.
 - b. Monitor and inspect the in-progress installation of all door hardware and record all installation deficiencies and the corrective action taken.
 - c. Advise the Owner, Contractor, and the Architect of progress, delays, and potential problems along with applicable corrective recommendations.
 - d. Inspect the completed installation.
 - e. Prepare and submit to the General Contractor with copies to the Owner and Architect, a detailed door-by-door punch list noting all installation deficiencies that have been corrected and how the corrections were made.

1.6 PRODUCT HANDLING

- A. Tag each item or package separately with identification related to final hardware schedule, and include basic installation instructions with each item or package.
- B. Packaging, identifying, and labeling of door hardware is responsibility of supplier. As material is received by hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.
- C. Inventory door hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.
- D. Deliver individually packaged door hardware items promptly to place of installation (shop or Project site).

- E. Provide secure lock-up for door hardware delivered to the Project but not yet installed. Control the storing, handling, and installing of hardware items that are not immediately replaceable so that completion of the Work will not be delayed by hardware losses both before and after installation.
- F. The hardware shipped to the job site is to be packaged in biodegradable packs such as paper or cardboard boxes and wrapping. If non-biodegradable packing such as plastic, plastic bags or large amounts of styrofoam is used, then the hardware contractor shall be responsible for the disposing non-biodegradable packing to a licensed or authorized collector for recycling of the non-biodegradable packing.
 - 1. Deliver all door hardware to the job site completely packaged, identified, and labeled, with all necessary nuts, screws, bolts, miscellaneous parts, instructions, and when necessary, all templates for installation.
 - 2. Clearly label packages for easy identification for installation.
 - 3. Prior to final approval of door hardware, the supplier shall furnish the Owner a copy of installation instructions for each hardware unit.
 - 4. Prior to the Architect's issuance of final certificate of payment, the supplier shall deliver all special tools to the Owner.

1.7 SEQUENCING AND SCHEDULING

- A. Send any part of the finish hardware required by the frame or door manufacturers or other suppliers that is needed in order to produce doors or frames to those suppliers in a timely manner, so as not to interrupt job progress.

1.8 MAINTENANCE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

1.9 WARRANTY

- A. All finish door hardware shall be supplied with the manufacturer's warranty labor and material warranties, or the following listed warranties whichever is longer, against defects in materials and workmanship, commencing with substantial completion of the project. If the specified warranty periods are not published by the manufacturer, then the manufacturers shall be willing to comply with these warranty requirements and submit a certified letter agreeing to provide the specified warranty periods. Manufacturers that do not agree to this provision are not acceptable.

Normal Warranties

- 1. Locksets: 5 years
- 2. Exit Devices: 5 years
- 3. Closers: 10 years
- 4. All other door hardware: 1 year

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. The specified manufacturers and products are intended to establish expected quality, design, function, and finish to be provided under this section of the specifications. Products by other manufactures may be submitted, by the General Contractor, to the Architect for review no later than 10 days prior to bid date.
- B. All other materials, not specifically described, but required for a complete and proper finish hardware installation, are to be selected by the Door Hardware Contractor, subject to the approval of the Architect.
- C. The Architect reserves the right to approve all the substitutions proposed for this specification. All requests for substitution to be made accordance with the Bidding Requirements and the Supplementary Conditions.

2.2 FASTENERS

- A. Furnish with finish hardware all necessary screws, bolts and other fasteners of suitable size and type to anchor the hardware in position for a long life under hard use.
- B. Furnish fastenings where necessary with expansion shields, toggle bolts and other anchors designated by the Architect according to the material to which the hardware is to be applied and the recommendations of the hardware manufacturer. All closers and exit devices on labeled wood doors shall be through-bolted, if required by the door manufacturer. All thresholds shall be fastened with machine screws and anchors. Where specified in the hardware sets, security type fasteners of the type called for are to be supplied.
- C. Design of all fastenings shall harmonize with the hardware as to material and finish.

2.3 POSITIVE PRESSURE

- A. Door Hardware: All applicable door hardware shall have been satisfactorily tested for and meet all requirements for positive pressure door openings in accordance with current addition of IBC.
- B. Wood Doors: Positive pressure sealing has been specified to be factory applied on all labeled wood doors.

2.4 HINGES

- A. All hinges to be of one manufacturer for continuity and consideration of warranty.

- B. Unless otherwise specified, provide five-knuckle, heavy-duty, button tip, full mortise template type hinges with non-rising loose pins. Provide non-removable to match what was on replaced doors.
1. Labeled Hinges/Positive Pressure: All hinges for labeled doors shall be true ball bearing hinges with applicable factory-applied UL stamp and shall comply with and shall have been satisfactorily tested for compliance with IBC-7-12-1997 or UL-10c requirements for positive pressure. **Friction bearing hinges are not acceptable.**
- C. Interior Door Hinges: Wrought steel, polished and plated to match existing. Furnish three (3) hinges up to 90 inches high and one (1) additional hinge for every 18 inches or fraction thereof.

Door Thickness (Inches)	Door Width (Inches)	Hinge Height (Inches)
1-3/4 inches	to 36 inches	4-1/2 inches
1-3/4 inches	over 36 to 48 inches	5 inches (0.180 inch thick)

- D. Provide size 4 1/2 inch x 4 1/2 inch for all 1 3/4 inch thick doors up to and including 48 inches wide. For doors over 1 3/4 inch through 2 1/4 inch thick, use 5 inch x 5 inch x 0.180 inch hinges.

Hinge Size to Thickness

Hinge Size	Standard Weight	Heavy Weight
4.5 x 4.5	0.134 inch thick	0.180 inch thick
5 x 4.5	0.145 inch thick	0.190 inch thick
6 x 4.5	0.16 inch thick	0.203 inch thick

- E. Where required to clear trim or permit doors to swing 180 degrees, furnish hinges of sufficient throw. Provide heavy weight hinges on all doors over 36 inches in width or weigh 150 pounds or more. . At labeled doors, provide steel or stainless steel, bearing-type hinges. For all doors equipped with closers, provide ball bearing hinges.
- F. Provide UL rated, true ball bearing hinges for all doors with closers and all labeled doors, no exceptions. Anti-friction type hinges are not acceptable.

2.5 LOCKS AND LOCK TRIM

- A. All interior locksets, latchsets, and trim shall be of one manufacturer to match manufacturer, design type, operation, finish, and function of what was on replaced doors
1. Labeled Locksets/Positive Pressure: All locksets for labeled doors shall be have applicable factory-applied UL stamp and shall comply with and shall have been satisfactorily tested for compliance with IBC-7-12-1997 or UL-10c requirements for positive pressure.
 2. Radiation Shielding: For lead-lined doors. Furnish with proper radiation shielding in accordance with provisions in Section 13090.

- B. Provide metal wrought box strike boxes and curved lip strikes with proper lip length to protect trim of the frame, but not to project more than 1/8 inch beyond frame trim or the inactive leaf of a pair of doors.
- C. Locks: Provide one of the following type to match what was on replaced doors:
 - 1. Mortise: Mechanical mortise Locks to meet ANSI Operational Grade 1 requirements where designated. Mortise locks to meet or exceed ANSI Security Grade 1 requirements.
 - a. 12 gage steel cap and case for all functions.
 - b. One piece 3/4 inch, stainless steel, anti-friction latch bolts.
 - c. One (1) inch stainless steel deadbolt with hardened steel roller inserts.
 - d. Hand of lock is to be easily field reversible without opening the lock body case.
 - e. All lever trim is to be through-bolted through the door and lock case.
 - f. All cylinder collars for mortise locks to be cast.
 - 2. Cylindrical Locks: Mechanical Cylindrical Locksets: ANSI A156.2, Series 4000 Grade 1. Lever and trim design as selected by the Architect. Acceptable Products:
- D. Finish: Match existing
- E. Lock Functions: Provide lock function to match what was on replaced doors.
- F. Dummy Lock Trim: Where dummy lock trim is specified, provide double trim on pairs of doors that are typically accessed from both sides. Provide single trim on pairs of doors that are typically accessed from one side. Provide on the side of normal access.

2.6 CYLINDERS AND KEYING

- A. Furnish all locks and cylinders keyed to Owners existing great grandmaster key system. All keying to be accomplished at the factory of the lock manufacturer. Comply with and provide any special keying, cylinders, and security requirements to meet Owner's specific needs and to match existing keying system.
- B. All keying will be coordinated with the Owner as required. Supplier shall meet with Owner to finalize keying requirements and to obtain final instructions in writing. The hardware supplier shall coordinate the deactivation of the construction keying with the Owner and , unless directed otherwise, shall install the Owner's permanent cylinders after deactivation of construction keying.

2.7 DOOR CLOSERS

- A. General
 - 1. All closers for this project to be the product of a single manufacturer to match manufacturer, design type, operation, finish, and function of what was on replaced doors. Warranty shall be a minimum advertised 10 years and tested by independent testing laboratory for 10,000,000 cycles.

- a. Fluid: Non-changing hydraulic fluid for temperature range of 120 degrees to -30 degrees F, equal to LCN Liquid "X" fluid.
 - b. Body: Cast iron body with steel piston (aluminum or plastic units are not acceptable).
2. All closers to be heavy duty, handed, hydraulic type, minimum efficiency of 60%, with a one piece high strength cast iron body and steel piston . Full rack and pinion constructed of heavy steel.
 - a. Labeled Closers/Positive Pressure: All closers for labeled doors shall be have applicable factory-applied UL stamp and shall comply with and shall have been satisfactorily tested for compliance with IBC-7-12-1997 or UL-10c requirements for positive pressure.
3. Size all closers in accordance with the manufacturer's recommendations at the factory for intended application, and sized to meet ADA opening force and requirements.
4. All closers to have adjustable spring power and separate tamper resistant, stainless steel, non-critical regulating screw valves for closing speed, latching speed and backcheck control as a standard feature.
5. All closer arms to be heavy duty forged steel with extra duty knuckled construction. Threaded, stamped, or "formbreak" arms will not be acceptable. Closers with dead stops on the arm bracket are not acceptable.
6. Supply appropriate arm assembly for each closer so that closer body and arm are mounted on non-public side of door opening and on the interior side of exterior openings, except where required otherwise in the hardware sets.
 - a. All parallel arm mounted closers to be factory indexed to ensure proper installation.
 - a. Furnish heavy duty cold forged parallel arms for all parallel arm mounted closers.
7. Provide closers with special application and heavy-duty arms as specified in the hardware sets or as otherwise called for to ensure a proper-operating, long-lasting opening.
8. Door Opening Force: Maximum force for pushing or pulling open a door shall comply with this paragraph. For hinged doors the force shall be applied perpendicular to the door at the door opener or 30 inches from the hinged side whichever is farther from the hinge.
 - a. Exterior hinged doors shall not exceed 8.5 lbf. Slight increases in opening force shall be allowed where 8.5 lbf. is insufficient to compensate for air pressure differentials.
 - b. Interior hinged doors shall not exceed 5.0 lbf.
 - c. Fire doors shall be adjusted to meet the minimum opening force permitted by governing fire safety standards.

9. Where doors are inset in the jamb, provide applicable combination closer, hinges, and stops to prevent door panels from striking the exterior face of the door from striking the outside edge of the opening. Adjust hardware accordingly.

- B. Surface Closers: In addition to the above general closer provisions, the following applies to doors that are scheduled for surface closers:

- 1 Exterior Closers: All closers on exterior doors shall be equipped with LCN Cush function or equal.
2. All closer covers to be rectangular, full cover type of non-corrosive **metal** finished to match closer and adjacent hardware.
3. The base of the closers shall be of a dimension so the base does not extend past the edges of the top rail of the door, the base of the closers is not visible through the glass from the exterior, and the mounting screws of the closer do not interfere with the glass. Drop plates for mounting the closer to narrower than required top door rails are not acceptable. Coordinate with the wood door descriptions in applicable individual specifications.

2.8 DOOR STOPS AND HOLDERS

- A. Match design type, operation, finish, and function of what was on replaced doors. Mount in existing location.

2.9 KICKPLATES

- A. Kick plates to be of 16 gauge (0.050) inches thick stainless steel (US32D).
2. Kickplates: 10 x 2 LDW

2.10 DOOR SILENCERS

- A. Furnish plug-type (not adhered type) door silencers at all openings without gasketing. . Provide 2 at each pair of doors and 3 for each single door. .

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."

2. Custom Steel Doors and Frames: DHI's "Recommended Locations for Builders' Hardware for Custom Steel Doors and Frames."
 3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware on to or in to surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.
- C. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- D. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- E. Mounting Heights: Shall be as follows, measured from finished floor except for top hinge which is measured from door top:
1. Bottom hinge: 10-3/8 inches hinged center.
 2. Top hinge: 9-3/4 inches hinge center.
 3. Intermediate hinges: Equally spaced between top and bottom hinges.
 4. Locks and latches: 38 inches operating spindle.
 5. Pulls, pull and push plates: 48 inches center.
 6. Deadlocks: 60 inches center.
- F. Labeled Doors: On all pairs of labeled egress door in corridors and cross corridors and that have an overlapping astragal, the pair of doors shall be equipped with a vertical rod exit device on one leaf, a mortise lockset on the other leaf, and applicable coordinator and carry bar.
- G. Hinges:
1. Install UL rated, true ball bearing hinges on all doors with closers and all labeled doors with and without closers, no exceptions. Anti-friction hinges are not acceptable.
- H. Closers:
1. Surface mount all closers
 2. Closers shall not be visible from Corridors; mount inside rooms.
 3. Adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point **3 inches** from the latch, measured to the leading edge of the door.
 4. Comply with the following maximum opening-force requirements indicated:
 - a Interior Hinged Doors: **5 lbf** applied perpendicular to door.
 - b Fire Doors: Minimum opening force allowable by authorities having jurisdiction. However, not more than **30 lbf** to set door in motion and not more than **15 lbf** to open door to minimum required width.

5. Where opening design will allow doors to open more than 90 degrees, adjust closer arms to allow maximum but still striking the door stop prior to reaching full opening to prevent closer from banging.
- I. Mop plates/Kick plates: Install flush with bottom of door.
 1. Install either a mop plate or kick plate as specified on push side all doors with closers. If a plate is not specified, then install a kick plate. Kick plates and mop plates are not to be installed on aluminum doors unless indicated in the hardware schedule.
 2. On single doors and where one plate is specified, install on push side.
 3. On pairs of doors and where two plates are specified, install one plate on push side of each leaf.
- J. Latches, Locks, and Exit Devices:
 1. Not more than **15 lbf** to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.

3.2 ADJUSTING, CLEANING, AND DEMONSTRATING

- A. Examine the installation of door hardware at each door for appearance, operation, function, and operation. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. All adjustments and repairs shall be at the Contractor's expense. Installation requirements include, but are not limited to, the following:
 1. Appearance:
 - a. All hardware shall be free of cosmetic defects. Replace hardware with scratches, nicks, dings, paint smears, etc.
 - b. Fasteners and through-bolts shall be tight and properly installed without denting face of door or defacing the door finish. All wood and metal doors with marred, scratched, dimpled, or otherwise defaced surfaces shall be replaced.
 - c. Fasteners shall not be defaced. Defaced fasteners shall be removed and replaced with acceptable fasteners. If replacement of fasteners damages hardware, hardware shall be replaced also.
 - d. All hardware shall be straight, true, plumb, and parallel as required.
 - e. Doors or hardware that experience visual or operational defects or damage from repairs or adjustment shall be replaced.
 - f. Plugging holes in doors and frames is not an acceptable repair for incorrect installations or making adjustments. These units shall be replaced.
 2. Operation: All doors and hardware that cannot be made acceptable to the Architect and Owner shall be replaced.
 - a. All hardware shall operate smoothly and quietly.
 - b. All hardware shall be tight.
 - c. Doors shall open and close smoothly and evenly without sagging, binding, sticking, or squeaking.
 - d. Doors without closers shall remain stationary at any point in travel.
 - e. Doors shall close without banging or vibrating frame.
 - f. Doors shall not rattle after closing.

- g. Doors shall contact stops properly.
 - h. Closers shall be set to opening force that complies with ADA requirements.
 - i. Lever handles shall be parallel to the floor.
 - j. Latch bolts and dead bolts shall center with applicable strikes.
 - k. Cylinders shall operate smoothly and freely and keys shall enter and withdraw easily without sticking.
 - l. Door stops shall stop door before door reaches limit of closer.
 - m. All silencers shall be in place and shall not be crushed.
 - n. All fasteners shall be of proper type supplied by the hardware manufacturer, and all fasteners shall be in place and properly installed and seated.
 - o. Excessive use of shims or visible shims are not acceptable.
 - p. Clearances (gaps) between doors and frames shall be correct and uniform around the perimeter (head, jamb, sill, and meeting stile) of each leaf.
 - q. Pairs of doors shall self close and latch properly both separately and as a pair. Adjust doors that do not self close and latch.
 - r. Hinge pins shall be fully seated.
 - s. Mortised components (strikes, lock faces, hinges, etc.) shall be set neatly in mortise with hairline joints between mortise walls and hardware, and face of hardware shall be flush with adjacent surfaces.
 - t. Adjust and set all door stops and closer arms to prevent conflict between doors during operation.
3. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
- B. Clean adjacent surfaces soiled by hardware installation.
- C. Instruct Owner's personnel in the proper adjustment and maintenance of door hardware and hardware finishes.
- D. Six-Month Adjustment: Approximately six months after the date of Substantial Completion, the installer, accompanied by representatives of the manufacturers of latchsets and locksets and of door control devices, and of other major hardware suppliers, shall return to the Project to perform the following work:
1. Examine and re-adjust each item of door hardware as necessary to restore function of doors and hardware to comply with specified requirements.
 2. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures.
 3. Replace hardware items that have deteriorated or failed due to faulty design, materials, or installation of hardware units.

4. Prepare a written report of current and predictable problems (of substantial nature) in the performance of the hardware.

SECTION 09 91 00 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes surface preparation, painting, and finishing of exposed interior and exterior items including new interior hollow metal frames and surfaces disturbed and damaged during execution of this Contract. All painting shall match existing color, gloss, texture, and paint generic.
- B. Paint exposed surfaces whether or not colors are designated in schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Architect will select from standard colors or finishes available.
 - 1. Painting includes field-painting exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.
- C. Painting is not required on prefinished items, finished metal surfaces, concealed surfaces, operating parts, and labels.
 - 1. Prefinished items not to be painted include the following factory-finished components:
 - a. Acoustic materials.
 - b. Architectural woodwork and casework.
 - c. Finished mechanical and electrical equipment.
 - d. Light fixtures.
 - e. Switchgear.
 - f. Distribution cabinets.
 - 2. Concealed surfaces not to be painted include wall or ceiling surfaces in the following generally inaccessible areas:
 - a. Foundation spaces.
 - b. Furred areas.

- c. Utility tunnels.
 - d. Pipe spaces.
 - e. Duct shafts.
 3. Finished metal surfaces not to be painted include:
 - a. Anodized aluminum.
 - b. Stainless steel.
 - c. Chromium plate.
 - d. Copper.
 - e. Bronze.
 - f. Brass.
 4. Operating parts not to be painted include moving parts of operating equipment, such as the following:
 - a. Valve and damper operators.
 - b. Linkages.
 - c. Sensing devices.
 - d. Motor and fan shafts.
 5. Labels: Do not paint over Underwriters Laboratories, Factory Mutual or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.
- D. Related Sections: The following Sections contain requirements that relate to this Section:
1. Division 08 Section "Hollow Metal Frames" for shop-priming steel doors and frames.

1.3 SUBMITTALS

- A. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for each paint system specified, including block fillers and primers.
 1. Provide the manufacturer's technical information including label analysis and instructions for handling, storage, and application of each material proposed for use.
 2. List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.
 3. When submitting a substitute for specified paints, submit Performance Characteristics based on same tests and units of measure as listed in published data for specified products. Drying times shall be measured at same temperature and relative humidity and

gloss units measured at the same angle as those listed in the manufacturer's published literature of the specified products. If manufacturer's published literature for substitute products states conditions that differ from those for the specified materials, submit certified calculations that convert advertised conditions to meet the conditions of the specified product. Submittals not meeting this requirement will not be reviewed.

4. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).
 5. Where substitutes are being submitted for review, as a minimum the following listed properties of the substitute product shall meet or exceed the same published properties of the specified product. Submittals without these properties will not be reviewed:
 - a. Generically the same
 - b. Solids volume
 - c. Solids weight
 - d. Recommended spread rate
 - e. Recommended dry film thickness
 - f. Drying times measured under the same conditions as those specified
 - g. Sheen/Gloss measured at the same angle as those specified
 - h. VOC properties
 - i. Abrasion resistance measured by the same testing standard and using the same units of measure.
 - j. Hardness
 - k. Chemical resistance
 - l. Weather/UV resistance
 - m. Pot life
- C. Samples for initial color, gloss, and texture selection in the form of manufacturer's color charts.
1. After color selection, the Architect will furnish color chips for surfaces to be coated.
- D. Samples for Verification Purposes: Provide samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate.
1. Provide stepped samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved. Approved samples will be used as a standard to judge, accept, or reject color, gloss, texture, and other attributes of the applied paints. The Architect will have final judgement of aesthetics of applied paints.
 2. Provide a list of material and application for each coat of each sample. Label each sample as to location and application.
- E. Paint Schedule: After all painting has been completed and accepted by the Owner, the painting contractor shall prepare and submit to the Owner an as-painted painting schedule. This schedule shall be dated, in tabular form, and shall list the following information by room name/number:

1. Room Name
2. Room Number
3. Paint Manufacture
4. Product Name
5. Product Color
6. Product Number

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall meet all of the following requirements:
1. Have products and paint systems listed with the Master Painters Institute (MPI) at the time of invitation or advertisement for bids for this project.
 2. Be able to provide published complete product performance data sheets for the specified products. These sheets shall be available at the time of invitation or advertisement for bids for this project.
 3. Have the production volume capacity to develop, produce and deliver the volume of paint and coatings required for this project within the required lead times to meet delivery dates without delaying the project.
 4. Be actively engaged in researching and developing its own paint and coating formulations.
 5. Specialize in manufacturing paint and protective coatings of the type specified for this project.
 6. Employ a fully trained and experienced technical staff capable of providing necessary field support to investigate problems and failures regarding surface preparation, application, and performance of supplied paints and coatings. As a minimum, technical staff shall have their own diagnostic equipment including dry film thickness gauges, adhesion gauges, and gloss meters.
- B. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to those indicated for the Project that have resulted in a construction record of successful in-service performance.
- C. Single-Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
1. Product name or title of material.
 2. Product description (generic classification or binder type).
 3. Manufacturer's stock number and date of manufacture.
 4. Contents by volume, for pigment and vehicle constituents.

5. Thinning instructions.
 6. Application instructions.
 7. Color name and number.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.6 JOB CONDITIONS

- A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F and 90 deg F.
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F and 95 deg F.
- C. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 90 percent; or at temperatures less than 5 F deg above the dew point and falling; or to damp or wet surfaces.
1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.
- D. Paint that is applied under conditions other than these stated conditions will be removed, surfaces prepared, and new paint applied under acceptable conditions at no additional cost.

1.7 EXTRA MATERIALS

- A. Provide 1 gallon of paint for each type and color of paint applied. Furnish extra paint in manufacturer's sealed shipping containers. Containers shall only be opened by the painter manufacturer/supplier to formulate required colors/mixes. These extra materials shall not be opened or used by the Contractor without written permission from the Owner. Place a label, protected by clear plastic, on the lid of each container with the following typewritten information:
1. Paint Manufacturer
 2. Product name and number
 3. Mixing and color formulation
 4. Painting contractor
 5. Date that the paint container is put in the Owner's inventory

- 6 Room or area number where the paint applied was used.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Provide interior paint systems for new unpainted substrates and existing painted substrates to match existing paint generic, color, and sheen/gloss, and texture from one of the following listed manufacturers. Manufacturers in the specified paint systems at the end of this section of the specifications are intended to indicate expected quality and performance and not to limit competition. Paint systems from other listed manufacturers may be submitted for review. Submitted product must be accompanied with the manufacturer's published product data sheets that show performance criteria. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item. All substitutes shall meet all of the minimum performance criteria of the specified product. Submittals not complying with this provision will be considered incomplete, unacceptable, and will not be reviewed or approved. Subject to compliance with requirements, products of one of the following manufacturers may be submitted for review.
1. Duron
 2. ICI Paints
 3. Porter Paints
 4. PPG Industries
 5. Rose Talbert Paint
- B. The applicable paint manufacturer intended for use on this project shall review the specified paint systems for accuracy, performance, and product availability. Notify the Architect of any discrepancies and compatibility between the substrates and paint systems and for intended use. Submit a letter of review and acceptance to the Architect prior to date of Bid. Failure to submit the requested letter will be inferred as acceptance of the specified paint systems.

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, finish coat materials, and related materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.
- B. Material Quality: Provide the manufacturer's best-quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.

1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish the manufacturer's material data and certificates of performance for proposed substitutions.
- C. Colors: Provide for selections made by Architect from manufacturer's full range of standard and custom styles, colors, textures, and patterns.

2.3 CLEANING MATERIALS

- A. To remove stains, spots, mold, and mildew, use Extra Muscle Pre-Paint Cleaner by Great Lakes Laboratories or as required by the paint manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions under which painting will be performed for compliance with paint application requirements. Surfaces receiving paint must be thoroughly dry before paint is applied.
 1. Do not begin to apply paint until unsatisfactory conditions have been corrected.
 2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.
- B. Moisture Testing. Test all interior wood surfaces and to be painted with pinless moisture meter to ensure moisture level complies with manufacturer's requirements. If manufacturer does not have requirements, then 15 to 16 percent maximum for exterior wood and 8 percent maximum for interior wood. No painting will be permitted if moisture content exceeds the recommended content. Record the following minimum information and submit to the Architect:
 1. Name of person making measurements
 2. Date and time of measurement
 3. Manufacturer and model no. of meter being used.
 4. Weather conditions at time of measurements (temperature in deg. F., relative humidity in %, and dew point in deg. F.
 5. Location on structure of each reading. For reference, make measurements at a protected area known to be dry to establish a base line.
 6. Record moisture levels in percent for each reading.
- C. Cementitious Materials:
 1. Masonry: Test all masonry surfaces that were exposed to moisture and are to be painted for moisture to ensure moisture level complies with manufacturer's requirements. Test with a pinless moisture meter calibrated for masonry. Moisture shall be within the limits of the paint manufacturer. If none specified, 12 percent or less.

D. Dry Wall:

1. Test all dry wall to be painted for moisture content levels that are acceptable to the paint manufacturer and the dry wall manufacturer. If acceptable levels are not available, then perform moisture tests in accordance with ASTM D4263 –Test Method For Indicating Moisture In Concrete By the Plastic Sheet Method. Although this method was developed for determining moisture presence in concrete, it is also suitable for dry wall work. If there is any presence of moisture on the back of the plastic sheet after the prescribed time, the dry wall is too damp to paint. Retest in the same location after the dry wall has been allowed to dry. Continue testing for moisture until there is no trace of moisture. Submit reports showing locations where tests were conducted.
2. Typical moisture meters are not calibrated to display the actual percent moisture in drywall. If a moisture meter must be used, take the average of several moisture measurements on drywall that is known to be dry. That average will establish a base line or reference point for comparing readings on questionable drywall. Measure the questionable drywall and compare that reading with the base line measurement. The readings should not be more than 10 reference points higher than the established base line.

- E. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers. Notify the Architect about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items, if necessary, to completely paint the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be painted according to the manufacturer's instructions for each particular substrate condition and as specified.
1. Provide barrier coats over incompatible primers or remove and reprime. Notify Architect in writing about anticipated problems using the specified finish-coat material with substrates primed by others.

2. Cementitious Materials: Prepare concrete, concrete masonry block, and brick surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen, as required, to remove glaze and establish a suitable anchor pattern for topcoats. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
 - a. Ensure materials have cured a minimum of 28 days.
 - b. Use abrasive blast-cleaning methods if recommended by the paint manufacturer.
 - c. Fill and smooth all depressions, spalls, cracks, fissures, etc. with repair materials compatible with the substrate and finish paint, according to manufacturer's instructions. All prepared and repaired surfaces shall have a smooth and uniform finish when painted.
 - d. Moisture: Determine moisture content of surfaces by performing appropriate tests. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions. Submit test results along with locations where measurements were made to the Architect.
 - e. Alkalinity: Determine alkalinity content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Ensure that pH is 10 or lower. Submit test results along with locations where measurements were made to the Architect.

3. Ferrous Metals:
 - a. Prepare only those surfaces that can be safely primed that same day while allowing for manufacturer's recommended curing time. Do not allow prepared surfaces to remain unprimed longer than 8 hours or overnight. Prepared surfaces that are allowed to remain unprimed longer than 8 hours or overnight shall be prepared again as specified even if there are no traces of rust bloom or dirt.
 - b. Remove loose dirt from damaged areas with a soft brush or with clean, non-linting rags.
 - c. Solvent-clean to remove grease, grime, residue, and surface contamination from damaged areas according to SSPC-SP1 – Solvent Cleaning.
 - d. Allow all surfaces solvent cleaned to thoroughly dry.
 - e. Remove loose primer and paint back to sound paint according to SSPC 3 – Power Tool Cleaning. Use SSPC 2 - Hand Tool Cleaning for areas not accessible to power tool cleaning. Remove all traces of visible mill scale, flux, and weld spatter.
 - f. Where existing primer is glazed or shiny, knock down glaze or gloss to establish and anchor pattern for new primer.
 - g. Where existing primer appears to be thin as evidenced by shadows or variegated appearance, check thickness of primer with a magnetic thickness tester such as a Positester. If dry film thickness of primer is less than 2 mils, perform steps b, c, d, e, and f of this procedure, and prime as specified.
 - h. When performing surface preparation, feather all exposed edges of existing primer to zero.

4. Galvanized Surfaces:
 - a. Remove soil, cement spatter, weld flux and spatter, and other surface dirt with a stiff brush, scraper, power grinder (for weld flux and spatter), or other suitable means.
 - b. Remove oil or grease by wiping or scrubbing the surface with rags or brushes wetted with suitable solvent such as mineral spirits according to SSPC-SP1-Solvent Cleaning. Perform final wiping with clean solvent and clean rags or brushes. Suitable solvents are mineral spirits, turpentine, or high-flash naphtha. If high-flash naphtha is selected, it shall be used only outdoors or in an extremely well ventilated area. Only when conditions prevent the use of flammable or toxic solvents such as MEK, mineral spirits, etc. for cleaning, then use safety solvents such as OF 482 by Hexcel Chemical Products, 205 N. Main Street, Lodi NJ 07664; phone 201 / 472-6800. Consult with Hexcel for specific products applications.
 - c. Should residual oils be difficult to remove, use an alkaline detergent such as trisodium phosphate (TSP). After cleaning, wash these surfaces thoroughly with water to remove the alkaline residue. Use water or water under pressure, preferably both. Follow manufacturer's instructions closely.
 - d. Some materials may not be easily removed by the above solvents and detergents. If this is the case, use stronger solvents such as methyl ethyl ketone (MEK) or acetone. Use aromatic and chlorinated hydrocarbons and ketones only when there is adequate supervision to assure safe working conditions.
 - e. Allow surfaces to dry completely then apply a vinyl wash primer to a minimum dry film thickness of 0.5 mil but not exceed 1.0 mil. Top coat wash primer within 8 hours or as directed by coating manufacturer.
 - f. Repair galvanized surfaces with galvanizing repair paint.
 - g. Test for Passivation Treatment: Prior to painting or applying any type of treatment, prep, repair material, or coating, test all galvanized steel for passivation treatment as follows:
 - 1.) Remove all oils and contamination as previously described.
 - 2.) Thoroughly sand a small area of the galvanizing with 80-150 grit sandpaper.
 - 3.) Saturate a small cotton swab with a 2 % solution of copper sulfate (Available at most drug stores) and dab both the sanded area and an unsanded area of the galvanized steel.
 - 4.) If both the sanded and unsanded areas turn black at approximately the same time (within approximately 10 seconds), the galvanizing was not treated with a passivator.
 - 5.) If only the unsanded area does not turn black or turns black slower than the sanded area, the galvanized steel was treated with a passivator.
 - 6.) If neither sanded or unsanded areas turn black, then the metal is not galvanized.
 - 7.) If test indicates the metal is galvanized steel that has been treated with a passivator, then prepare the surfaces as recommended by the paint manufacturer.

5. Previously Painted Surfaces:

- a. Remove grease, oil and dirt according to SSPC-SP-1 solvent cleaning.
- b. Only when conditions prevent the use of flammable or toxic solvents such as MEK, mineral spirits, etc. for cleaning, then use safety solvents such as F0482 by Hexcel Chemical Products, 205 N. Main Street, Lodi, NJ 07644: phone 201 / 472-6800. Consult with Hexcel for specific products applications.
- c. Remove dust, grime, loose dirt, etc. with soft brush and vacuum. Remove all loose paint back to sound paint, and knock down all gloss. Roughen, as required, to remove glaze and establish a suitable anchor pattern for topcoats. Ensure that surfaces are sufficiently abraded and roughened to provide a sound anchoring base for new paint.
- d. Where rusting conditions exist on ferrous surfaces, remove rust according to SSPC-SP2-Hand Tool Cleaning or SSPC-SP3-Power Tool Cleaning. Touch up with one coat of coating recommended by finish coating manufacturer to a dry film thickness recommended by finish coat manufacturer.
- e. Where knots in wood are exposed or have damaged or discolored the finish, scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer and finish. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
- f. Where paint is missing, damaged, dented, or concrete, concrete block, wood, and gypsum wallboard, are exposed, remove surface contamination, feather all edges to zero, sand surfaces smooth, and prime surfaces with primer recommended by finish coating manufacturer. Primer shall be compatible with the existing and new finish.
- g. Where substrate bleeds through occurs, apply as many coats of stain block as necessary to stop the bleed through. Use blocker that is recommended by the finish coat manufacturer.
- h. Where paint is loose or is not otherwise fully and tightly adhered to the substrate or to undercoats, remove all paint back to sound paint and down to the substrate and then feather all edges to zero. If 40 percent or more of the paint on a given substrate (wall, floor, ceiling, door, column, etc.) is loose or damaged or is otherwise unsound, remove all of the paint down to the substrate. If 25 percent or more of paint on given substrate is loose or is not otherwise fully and tightly adhered to the substrate or to undercoats, the technical representative of the paint manufacturer shall approve surface preparation prior to beginning painting.
- i. Test small area of previously painted finish with new finish paint in the presence of the Owner. Apply finish paint to specified thickness. Do not continue coating this previously painted surface until test area has been reviewed by the Owner. Continue test for manufacturer's recommended published "length of time before recoating". If the previously painted surface blisters, wrinkles, dissolves, delaminates, or shows other signs of incompatibility, the previously painted surface and new finish are not compatible. Where previously painted surface is not compatible with finish coat, apply a proper barrier coat to prime coat. Allow manufacturer's suggested drying time between succeeding coat and check film of

previous coat with fingernail to be certain it is cured. Notify the Owner before applying succeeding coat so that previous coat may be inspected, if necessary, and credited as an applied coat. Failure to do so shall result in recoating at no expense to the Owner.

- j. Where surrounding paint has been removed to expose substrate and the edges of removed paint have feathered to zero, touch up exposed substrate with proper and recommended primer. After touch up has properly cured, apply a complete prime coat over entire surface to be painted including the touched up surfaces.
- k. A qualified technical representative from the paint manufacturer shall approve, in writing, a sample surface preparation for each type substrate to be prepared over previously painted surfaces. This approval shall state time, date, location, and substrate being evaluated. The approved sample shall be a standard for evaluating all other surface preparation for the same substrate.
- l. Lead-based paints:
 - 1) Applicators involved in the disturbance of lead-based paint must comply with OSHA 29 CFR 1926.62. OSHA requires that the employees involved in the contact of lead-based paint must be trained, must have medical examinations (if the action level is exceeded during work activities involving the disturbance of lead-based paint), and must have an exposure assessment performed. If the employee is exposed to levels over the Permissible Exposure Limit (PEL), other work engineering and personnel protective equipment requirements of OSHA must be followed in accordance with 29 CFR 1926.62.
 - 2) Perform required personnel air monitoring to establish employee exposure assessments in accordance with OSHA 29 CFR 1926.62 when working with lead-based paints. Send copy of the air monitoring reports to the Architect, and the Environmental Consultant (AAA Environmental).
 - 3) Prior to the disturbance of lead-based painted surfaces, place a layer of six mil polyethylene sheeting on the floor beneath the work area. The intent of work-related activities involving the disturbance of lead-based paint is to minimize large accumulations of lead. Clean up floors and other surfaces contaminated with lead-based paint dust/chips by vacuuming and/or wet wipe methods to minimize the likelihood of lead becoming airborne. The vacuum shall be equipped with HEPA filters. Compressed air shall not be used to remove lead from any surface unless the compressed air is used in conjunction with a ventilation system designed to capture the airborne dust created by the compressed air.
 - 4) All construction debris having painted surfaces exceeding 0.06% lead must be disposed of in a municipal solid waste landfill (lined landfill) according to SCDHEC Division of Solid and Waste Planning and Recycling pertaining to waste disposal requirements. Hazardous waste shipments shall be accompanied by a Uniform Hazardous Waste Manifest that shall be properly completed and copies returned to the Architect before the Contractor receives final payment.
 - 5) Upon completion of all work activities involving the disturbance of lead-based painted surfaces including the exterior of the building, the

Environmental Consultant will conduct a final visual inspection of the areas. Provided the areas are visibly clean, clearance testing shall be performed. The clearance test will include the collection of wipe samples from the interior areas of the building. These results will be compared to current regulatory requirements as outlined EPA 40 CFR Part 745. Should the clearance samples fail to meet the regulatory requirements outlined in EPA 40 CFR Part 745, the contractor will be required to perform additional cleaning, and a second clearance test will be performed at the Contractor's expense for all professional and laboratory fees.

- 6) AAA Environmental has been designated as the Environmental Consultant and will review all OSHA documentation (training documentation and medical examination data for exposure to lead-based paint), conduct periodic site visits, and review all employee exposure assessment/personnel air monitoring data.

6. Dry Wall

1. Inspect dry wall in the presence of the General Contractor, drywall contractor and Architect to evaluate condition of drywall for painting. Ensure that all defects in drywall are corrected prior to primer application.
2. Brush or wipe down drywall surfaces with a damp (not wet) mop to remove all loose dust.
3. Evaluate drywall surfaces after primer has cured. Primer will highlight imperfections that must be corrected prior to application of top coats.
4. Determine if drywall imperfections are too excessive to repair and paint and coordinate with the Architect regarding removal of drywall and replacing with new drywall. If surfaces are to be repaired and painted, fill and smooth all depressions, spalls, cracks, fissures, etc. with repair materials compatible with the substrate and finish paint, according to manufacturer's instructions. All prepared and repaired surfaces shall have a smooth and uniform finish when painted.

E Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions.

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
3. Use only thinners approved by the paint manufacturer and only within recommended limits.
4. Do not store shellac in iron containers.

F Tinting: Tint each undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat. Should there be a disagreement in the number of coats applied and the individual coats were

not tinted so as to be distinguished, then the painting contractor shall apply, at no additional cost, the additional number of coats that when added to the number of coats already applied by the painting contractor and that can be positively distinguished, will equal the number of specified coats.

3.3 APPLICATION

- A. General: Apply paint according to manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Use only primer color that is recommended on the back of the paint manufacturer's finish color chip to achieve the required color. Where the finish color, sheen, or texture is not as represented in the approved color sample and the recommended primer was not used, apply required additional coats to achieve acceptable results. These additional coats will be applied at no increase in contract sum or time.
- B. Do not paint over defective undercoat, dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
1. Paint colors, surface treatments, and finishes are indicated in the schedules.
 2. Provide finish coats that are compatible with primers used.
 3. The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce a smooth even surface according to the manufacturer's directions.
 4. Apply additional coats if undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, texture, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces. The additional coats shall be applied at no additional cost to the Owner.
 5. The term exposed surfaces includes areas visible when permanent or built-in fixtures, convactor covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
 6. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 7. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, nonspecular black paint.
 8. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 9. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
 10. Finish exterior doors on tops, bottoms, and side edges same as exterior faces.
 11. Sand lightly between each succeeding enamel or varnish coat.
 12. Omit primer on metal surfaces that have been shop-primed and touch-up painted.

- C. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.
- D. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to the manufacturer's directions.
1. Brushes: Use brushes best suited for the material applied.
 2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.
- E. Minimum Coating Thickness: Apply materials no thinner than the manufacturer's recommended spreading rate and dry film thickness for each coat. Provide the total dry film thickness of the entire system as recommended by the manufacturer.
- F. Block Fillers: Apply block fillers to concrete masonry at a rate and as many coats as required to fill, seal, and smooth, and to ensure complete coverage with pores filled so that finish produces a smooth and cleanable surface. Prior to applying an epoxy finish to CMU in the Kitchen and Cafeteria, obtain approval from the District Food Supervisor, of the application of the block filler.
- G. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime-coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
1. Back Priming: Back prime, including all edges and concealed surfaces, of all lumber, ferrous and galvanized metal prior to installation. Apply primer to the same specifications as for the exposed surfaces. Installed items not back-primed shall be removed, properly primed, and reinstalled at the Contractor's expense. Damaged materials shall be replaced. This provision applies to both interior and exterior installations. Coordinate with all carpentry and steel specifications for materials to be painted.
- H. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with specified requirements.

3.4 FIELD QUALITY CONTROL

- A. Each applicator shall have a clean accurate wet film gauge for use over smooth surfaces (metal, GWB, smooth and plaster and concrete, etc.). During application of each coat of paint, including primers, each applicator shall make regular measurements of the applied paint using a clean wet film gauge. The gauge shall be wiped clean after each measurement.
1. The project painting supervisor shall complete a Project Paint Record form similar to the form at the end of this specification. The forms shall be completed at the end of each day and submitted to the Architect weekly.
 - a. Date: The date measurements were taken.
 - b. Location: Room or area where measurements were made.
 - c. Substrate: Drywall, CMU, concrete, wood, steel doors, structural steel, etc.
 - d. Applied WFT or Spread Rate Per Coat: Show the specified wet film thickness (WFT) and the actual measured wet film thickness of each coat. Show the min-max range such as 4-6 mils. If a coat is not applicable (primer is shop-applied), no entry is required.
 - e. For irregular surfaces such as CMU and rough concrete and plaster, thickness shall be determined by spread rate. Spread rate is determined as follows:
 1. Check the manufacturer's published theoretic spread rate of square feet per gallon per coat.
 2. Measure off the square footage a gallon of paint is to cover on the substrate that is to be painted
 3. Apply one gallon of properly prepared paint over the measured area of substrate using equipment and procedures that will be used for actual application.
 4. If the gallon of paint completely covers the measured area in an even and uniform manner with no drips, sags, runs, or spread marks, the spread rate is acceptable. If there is paint left over, the spread rate may be too high resulting in a coat that is too thin. If the paint runs out before completing, the spread rate may be too low resulting in a coat that is too thick.
- B. If the Owner or the Architect determine that the substrate or undercoats are visible through the finish, or the finish appearance is shaded, or texture is uneven, then additional coats shall be applied, at no additional cost to the Owner, to provide an acceptable finish.
- C. If the Owner or Architect suspect that substrates were not properly prepared or improper primer/finishes were used, or that coatings were not applied to the recommend or specified rate or thickness, the Owner reserves the right to engage the testing and evaluation services of the either the Architect or an independent testing agency or both. The Owner reserves the right to invoke the following test procedure at any time and as often as the Owner deems necessary during the period when paint is being applied:
1. The Owner will engage the services of an independent testing agency to sample the paint material being used. Samples of material delivered to the Project will be taken, identified, sealed, and certified in the presence of the Contractor.
 2. The testing agency will perform appropriate tests for the following characteristics as required by the Owner:
 - a. Quantitative materials analysis.

- b. Abrasion resistance.
 - c. Apparent reflectivity including color and shading of undercoats.
 - d. Flexibility.
 - e. Washability.
 - f. Absorption.
 - g. Accelerated weathering.
 - h. Dry opacity.
 - i. Accelerated yellowness.
 - j. Recoating.
 - k. Skinning.
 - l. Color retention.
 - m. Alkali and mildew resistance.
3. If test results show that material being used does not comply with specified requirements, that substrate was not properly prepared, the specified or recommended number of coats were not applied, or the thickness of each coat is not as specified or recommended, then the Contractor may be directed to stop painting, remove noncomplying paint, pay for testing, repaint surfaces coated with rejected paint, and remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are incompatible.

3.5 CLEANING

- A. Cleanup: At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the site.
 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.6 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.
- B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
 1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.7 INTERIOR PAINT SYSTEMS

The paint systems for new hollow metal frames and for touching up existing drywall, CMU, and other surfaces disturbed during the execution of the elevator modernizing are listed below and are intended to show the expected quality and performance of the paints.

A. Concrete Masonry And Concrete

High Performance Acrylic Semi-Gloss Finish: 2 finish coats over block filler

PPG

1. Filler: coat SPEEDHIDE® Interior/Exterior Acrylic Masonry Block Filler
6-15 to fill and seal
2. Finish: 2 coats SPEEDHIDE® Interior Semi-Gloss Acrylic Latex Enamel 6-500Series at
mils 3.0 minimum to 4.0 maximum mils WFT per coat.

Sherwin Williams

1. Filler: Preprite Blockfiller B25W25 to fill and seal
2. Finish: 2 coats DTM Acrylic Semi-Gloss B66W211 at 2.5-4 mils DFT per coat

B. Gypsum Drywall

Acrylic Eggshell Finish: 2 finish coats over sealer

PPG

- 1 Primer: 1 coat SPEEDHIDE® Interior Latex Sealer 6-2 at mils 3.6 minimum to 4.5
maximum mils WFT per coat
2. Finish: 2 coats SPEEDHIDE® Interior Eggshell Acrylic Latex Enamel 6-411Series at
mils 3.2 minimum to 4.0 maximum mils WFT per coat

Sherwin Williams (Normal Exposure)

- 1 .Primer: 1 coat ProMar 200 Latex Primer B28W200 at 4 mils per coat WFT
2. Finish: 2 Coats Promar 200 Eggshell B20W2251 at 4 mils per coat WFT Acrylic Flat
Latex Finish: 2 finish coats over sealer

C. Ferrous Metals

High Performance Acrylic, Semi-Gloss

PPG

1. Primer: 1 coat Pitt-Tech® One Pack Interior/Exterior Primer/Finish DTM Industrial Enamel
90-708 Series at 2.0 minimum to 3.0 maximum mils DFT per coat.
2. Finish: 2 coats Pitt-Tech® One Pack Interior/Exterior Satin DTM Industrial Enamel 90-474
Series at 2.0 minimum to 3.0 maximum mils DFT per coat.

Sherwin Williams (Normal Exposure)

High Performance Acrylic

1. Primer: 1 coat ProCryl Universal Primer B66W310 at 2-4 mils DFT per coat
2. Finish: 2 coats Sher-Cryl HPA B66-350 at 3 mils DFT per coat.

END OF SECTION 09 90 00

**PAINT MANUFACTURER'S
SURFACE PREPARATION EVALUATION**

Project Name:
General Contractor

Project No.
Painting Contractor:

DATE EVALUATED	SUBSTRATE	LOCATION	ACCEPT.	* NOT ACCEPT.

* State reasons for rejection and what needs to be done to correct rejection.

Evaluations of the above described surfaces were conducted by me as indicated in the log.

Technical Representative's Signature, Title, and Company

Paint Manufacturer

SECTION 14 24 05 – ELEVATOR REPAIRS AND RESTORATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. General

1. This Section includes performing hydraulic elevator repairs and restoration as indicated on the Drawings, specified in this section and described in the Elevator Report. A copy of this Elevator Report is attached to this specification and becomes a part of the Contract Documents. The elevator that is a part of this Contract is located in the Humanities and Social Services Building
2. Completed work shall bring the elevator in this contract in compliance with existing governing codes and regulations of applicable governing authorities and shall qualify the elevator in this contract for the warranties described in this section of the Specifications.

- B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section Cutting and Patching for repairs to disturbed surfaces.
2. Division 1 Section 01026 for Unit Pricing for excavation.
3. Division 2 Section "Selective Demolition" for selective demolition and removal of building and equipment elements and components to be removed.
4. Division 5 Section "Metal Fabrications" for miscellaneous steel framing and components
5. Division 9 Section "Painting" for field painting of hoistway entrances.
6. Division 15 for Mechanical Work
7. Division 16 for Electrical Work

1.3 DEFINITIONS

- A. Defective Elevator Work: Operation or control system failures; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; the need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.
- B. The terms repairs, renovation, restorations, renewal, revisions, etc. whether used collectively or individually or separately, shall mean providing all materials, supplies, equipment, components, systems, and labor to complete work described in the Contract Documents, recommended or

required by the respective elevator manufactures, and that complies with governing authorities, codes, and regulations.

1.4 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data for products, material, components, and equipment to be used for repairs, upgrades, and rework and incorporated into the work for the elevator.
- C. Shop Drawings for the elevator showing extent of work and how it is to be performed.
- E. Updated maintenance manuals for the restored elevator, including new operation and maintenance instructions, parts listing with sources indicated, recommended parts inventory listing, emergency instructions, and similar information. Include all diagnostic and repair information available to manufacturer's and Installer's maintenance personnel. Submit for Owner's information at project closeout as specified in Division 1.
- F. Inspection and acceptance certificates and operating permits as required by governing authorities for normal, unrestricted elevator use.

1.5 QUALITY ASSURANCE

- A. Repair and Restoration Contractor Qualifications: Engage the elevator manufacturer or an experienced Installer that has completed elevator installations similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
 - 1. Be experienced in repairing and restoring elevators of the type in this Contract
 - 2. Have a minimum 5 years' continuous experience in work required by this Contract.
 - 3. Be able to and perform all required work by own work forces.
 - 4. Submit a list of at least 5 successfully completed projects of comparable size, scope, and complexity. Show client, location, completion date, work performed, amount of contract, and contact person.
- B. Regulatory Requirements: In addition to local governing regulations, comply with the applicable provisions of the following:
 - 1. ASME A17.1, "Safety Code for Elevators and Escalators (2010)," referred to as the "Code" and CSA B44 "Safety Code For Elevators"
 - a. Seismic Zone: Comply with code and regulations requirements for governing authorities for applicable seismic classification/zone for this project.
 - 2. South Carolina LLR "Department of Labor Licensing and Regulation" Office of Elevator and Amusement Rides

1.6 WARRANTY

- A. General Warranty: The elevator warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
 - 1. Warranty Period: 12 months from date of Substantial Completion of repairs and restoration of each elevator.

1.7 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion, provide 12 months' full maintenance service by skilled, competent employees of the elevator repair entity. Include monthly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper elevator operation at rated speed and capacity. Use parts and supplies as used in the manufacture and installation of original equipment.
 - 1. Perform maintenance, including emergency callback service, during normal working hours.
 - 2. Include 24-hour-per-day, 7-day-per-week emergency callback service.
 - a. Response Time: 2 hours or less.
- B. Continuing Maintenance Service: Continuing maintenance and service for the repaired and renovated elevators associated with this project will be assigned to the Owner's existing elevator service company contract.
- C. Maintenance contract provided under this project shall not interfere, conflict with or void any existing elevator maintenance the Owner may have. Additionally, the Owner may ask this elevator contractor to enter into a long term maintenance agreement for all existing elevators.

PART 2 - PRODUCTS

2.1 MATERIALS AND COMPONENTS

- A. General:
 - 1. Provide materials, components, equipment, and systems recommended and approved by the respective elevator manufacturers for the type repairs and restorations required by this Contract for the specific elevator.
 - 2. Where components are not otherwise indicated, provide standard components, published by manufacturer as included in standard pre-engineered elevator systems and as required for a complete system.
 - 3. Provide all materials, components, equipment, and systems for a complete and operational restoration, even if not listed or mentioned in the Contract documents.
 - 4. All pricing is to be based on one of the following manufacturers:
 - a. Otis Elevator
 - b. Schindler Elevator
 - c. Thyssen Krupp Elevator

- d. Unitec
 - e. Wright Elevator Solutions
 - f. GAL Manufacturing
5. Approved equals substitutes will be reviewed as indicated by the specifications.
- B. Hydraulic Machines and Elevator Equipment: Provide electric pump-tank-control system equipment in machine room as indicated.
1. Pump Unit: Positive displacement pump with a maximum of 10 percent variation between no load and full load and fan-cooled squirrel cage induction motor.
 - a. Provide motor with wye-delta starting.
- C. Power Supply: Verify and match existing power supply
- D. Piping: Provide size, type, and weight piping recommended by manufacturer, and provide isolation couplings to prevent sound/vibration transmissions from power unit.
- E. Inserts: Furnish required concrete and masonry inserts and similar anchorage devices for installing guide rails, machinery, and other components of elevator work where installation of devices is specified in another Specification Section.
- F. PVC Pipe: ASTM D 1785.
1. Fittings for PVC Pipe: ASTM D 2466.
 2. Solvent Cement for PVC Pipe and Fittings: ASTM D 2564.
- G. Car Frame and Platform: Welded steel units.
- H. Hydraulic Oil Containment: Provide for a system to collect, receive, and hold hydraulic oil in the event of an oil leak. System shall prevent leaking oil from coming into contact with the floor or building finishes or from draining or running to other parts of the building or into the building sanitary or storm drainage system. Containment system shall meet most current ASME requirements.
- I. Sound Isolation: Provide applicable sound isolation for each elevator to eliminate noise and sound dissemination to adjacent spaces from elevator operation.

2.2 OPERATION SYSTEMS

- A. Where recommended in the Elevator Report or required by governing authorities, provide the proper additions, repairs, renovations, and restorations to the following existing equipments, to comply with the respective elevator manufacturer's requirements:
1. Provide manufacturer's standard recommended microprocessor operation system for each respective elevator.

2. Single Elevator - Passenger: Provide "Selective-Collective Automatic Operation" as defined in ASME A17.1.

C. Battery Power Source - Automatic Return And Shutdown

1. Provide a battery power source with auxiliary dry relay contacts or an isolated switch in the disconnect switch and shunt trip disconnect that controls the normal power feed to the elevator. This switching equipment shall be provided by the elevator supplier and installed by the electrical contractor. These switches shall allow the disconnect switch and shunt trip disconnect switch to be placed in the "OFF" position without having the elevator move unexpectedly.
2. If normal power fails, the battery power source will sense that normal power has been lost and will activate the automatic and return shutdown feature. All three types of standby power operation automatic recall and shutdown have the same mode of operation.
3. If a power loss is sensed while the car is traveling above a preselected floor, the car will stop and lower to a preselected landing. If the car is below the preselected landing when power is lost, the car will travel down to the next available landing, cycle the doors, and shut down. If the car is level with a landing when power is lost, and the preselected landing is above the car, the car will remain at the landing, cycle the doors, and shut down. The door open button located in the car will remain operative to prevent passengers from being trapped inside the car.
4. When the disconnect switches are in the normal power position, the auxiliary contacts shall be closed. The minimum rating of the auxiliary contacts are 1 amp @ 48 VDC, dry and isolated with a contact configuration of SPST. Provide a sealed contact or a contact set with generous wiping action to allow switching operations to clean the contacts.

- D. Key switch operation: Provide feature with car and hall push buttons activated and deactivated by security key switches. Key is removable only in the deactivated position. Coordinate exact keying requirements with the Owner.

2.3 SIGNAL EQUIPMENT

- A. General: Where recommended in the Elevator Report or required by governing authorities, provide the following equipments, additions, repairs, and restorations to comply with elevator manufacturer's requirements: Provide signal equipment complying with requirements indicated below.

1. Illuminated hall-call and car-call buttons that light when activated and remain lit until call has been fulfilled. Fabricate of acrylic or other permanent translucent plastic.
2. Except for buttons and illuminated elements, fabricate signal equipment with exposed surfaces as follows:
 - a. Car Fixtures: Satin stainless steel.
 - b. Hall Fixtures: Recessed type with no exposed-metal surfaces.

- B. Car Control Stations: Provide manufacturer's standard semi-recessed car control station in each car. Include call buttons for each landing served and other buttons, switches, and controls required for specified car operation. Provide operating device symbols as required by the

"Code." Mark other buttons and switches with manufacturer's standard identification for required use or function. Mount in return panel adjacent to car door, if not otherwise indicated.

1. Mount controls as shown or scheduled and at heights complying with ANSI A117.1 and ADA requirements.
- C. Telephone: Provide rough-in for telephone handset in each car, contained in flush-mounted cabinet and complete with identification and instructions for use. Provide a hands free phone for each car compatible with the Owner's communication system.
- D. Car-Top Alarm: Provide switches on top emergency exits that will cause alarm to sound when cover is opened.
- E. Hall Push-Button Stations: Provide 1 hall push-button station at each landing
1. Provide units with flat faceplate designed for mounting on wall with body of units recessed in wall: 2-button stations at intermediate landings; 1-button stations with direction indication at terminal landings. Provide push button with key operated activation.
- K. Hall Lanterns: Provide units with illuminated arrows, but provide single arrow at terminal landings. Match materials, finishes, and mounting method of hall push-button stations.
1. Provide units projecting from faceplates for ease of angular viewing.
 2. Place 1 lantern either above or beside each hoistway entrance, unless otherwise shown. Mount at minimum of 72 inches above finished floor.
 3. Place lanterns in both jambs of entrance frame for each elevator. Mount at minimum of 72 inches above finished floor.
 - a. At manufacturer's option, audible signals and an in-car lantern may be placed on each car.
- L. Hall Position Indicator: Provide illuminated-signal type or digital-display type, located above each hoistway entrance at ground floor. Match materials, finishes, and mounting method of hall push-button stations.
1. Integrate ground-floor hall lanterns with hall position indicators.
- 2.4 DOOR SAFETY DEVICES
- A. Where recommended in the Elevator Report or required by governing authorities, provide the following equipments, additions, repairs, and restorations to comply with elevator manufacturer's requirements:
- B. Infrared Array: Provide door reopening device with uniform array of 36 or more microprocessor-controlled, infrared light beams projecting across car entrance. Interruption of one or more light beams shall cause doors to stop and reopen.

1. Nudging Feature: After car doors are prevented from closing for predetermined adjustable time, through activating door reopening device, a loud buzzer shall sound and doors shall begin to close at reduced kinetic energy.

2.5 PASSENGER ELEVATOR CAR ENCLOSURES

- A. General: Where recommended in the Elevator Report or required by governing authorities, provide the following equipments, additions, repairs, and restorations to comply with elevator manufacturer's requirements:
 1. Include ventilation, lighting, access doors, doors, power door operators, sills (thresholds), trim and accessories. When replacing doors, provide manufacturer's standard flush-panel horizontal-sliding doors of type indicated.

2.6 PASSENGER HOISTWAY ENTRANCES

- A. Where recommended in the Elevator Report or required by governing authorities, provide the following equipments, additions, repairs, and restorations to comply with elevator manufacturer's requirements:
 1. Where door replacement is required, provide manufacturer's standard hollow-metal, sliding, door-and-frame hoistway entrances complete with track systems, hardware, sills, and accessories. Match car doors for size, number of panels, and door movement. Provide frame size and profile to coordinate with hoistway wall construction. Fabricate frames with reinforced head sections.
 2. Materials and Fabrication: Provide selections indicated; provide manufacturer's standards, but not less than the following:
 - a. Stainless Steel Door and Frames: Stainless steel sheet, ASTM A167, Type 302 or 304, with No. 4 satin finish.
 - b. Aluminum Sills: Extruded aluminum, with grooved surface, 1/4 inch thickness, mill finish.
 - c. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for grouting doorsills and similar applications.
 3. Sign: If missing, or damaged, provide and install illuminated signs that complies with location and visibility requirements of local governing authorities. Refer to owner's sign package.

2.7 PASSENGER ELEVATOR CAR ENCLOSURES

- A. General: Provide manufacturer's standard finish products of the selections indicated. Include trim, accessories, and wall and ceiling finishes. Provide manufacturer's standard protective edge trim system for door and wall panels.
- B. Materials and Fabrication: Provide selections indicated for each car enclosure surface; provide manufacturer's standards, but not less than the following:

1. Cab. Stainless steel cab fronts with swing return. Rear and side panels: Fabricate and install horizontal panel laminate system (1/2" fire rated board, paper backed and all edges laminated with clips) Standard "Wild Cherry" laminate finish
2. Fabricate car with recesses and cutouts for signal equipment.
3. Stainless Steel Ceiling: #4 Finish Stainless Steel Ceiling with 6 - 2.75" can LED Lights with dimmer (Easy mount system)
4. Handrails: Provide manufacturer's #4 Finish Stainless Steel Flat Handrails 3/8"x 2" all three walls
5. Pad Hooks and Pads: Manufacturer's standard pad hooks and quilted pads for side and rear panels.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine existing elevator areas for extent of work to be performed, coordination with the elevator report, compliance with requirements, installation tolerances, and other conditions affecting performance of elevator work. Examine installed elevators, hoistways, hoistway openings, pits, and machine rooms, as constructed; and verify critical dimensions; and examine supporting structure and other conditions under which elevator repair and restoration work is to be performed. Do not proceed with installation without complete comprehension and understanding of the full scope of required work under this Contract.

3.2 INSTALLATION

- A. General: Where recommended in the report or required by governing authorities, install required and recommended materials, products, equipment and components to complete the additions, repairs, and restorations as specified in the Contract Documents.
- B. Comply with respective elevator manufacturer's requirements, instructions, and recommendations and with all governing authorities.
- C. Welded Construction: Provide welded connections for performing required work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS standards for workmanship and for qualifications of welding operators.
- D. Coordination: Coordinate elevator work with work of other trades for proper time and sequence to avoid construction delays. Use established benchmarks, lines, and levels to ensure dimensional coordination of the Work.
- E. Sound Isolation: Install recommended sound isolation and reduction designed to effectively prevent transmission of vibrations and noise to structure and adjacent spaces.

- G. Install new and replacement piping above the floor, where possible. Where not possible, cover underground piping with permanent protective wrapping before backfilling.
- H. Lubricate operating parts of systems, including ropes, if any, as recommended by manufacturers.
- I. Alignment: Coordinate hoistway entrances with elevator guide rails for accurate alignment of entrances with cars.
- J. Leveling Tolerance: 1/4 inch up or down, regardless of load and direction of travel.
- K. Set sills flush with finished floor surface at landings. Fill space under sills solidly with nonshrink, nonmetallic grout.

3.3 FIELD QUALITY CONTROL

- A. Acceptance Testing: Upon nominal completion of repairs, renovations, restorations, and revisions, perform acceptance tests as required and recommended by the "Code" and by governing regulations and agencies.
- B. Advise Owner, Architect, and authorities having jurisdiction in advance of dates and times tests are to be performed on elevators.

3.4 DEMONSTRATION

- A. Instruct Owner's personnel in proper use, operations, and daily maintenance of reworked elevators especially where procedures may be different than prior to updates. Review emergency provisions, including emergency access and operating procedures to be followed at time of failure in operation and other building emergencies. Train Owner's personnel in procedures to follow in identifying sources of operational failures or malfunctions. Confer with Owner on requirements for a complete elevator maintenance program.
- B. Make a final check of each elevator operation with Owner's personnel present and just prior to date of Substantial Completion. Determine that operation systems and devices are functioning properly.

3.5 PROTECTION

- A. Temporary Use: Do not use elevators for construction purposes unless cars are provided with proper temporary protection to protect finishes, components, and equipment.
 - 1. Provide full maintenance service by skilled, competent employees of the elevator Installer for elevators used for construction purposes. Include preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and

- adjusting as required for proper elevator operation at rated speed and capacity. Use parts and supplies as used in the manufacture and installation of original equipment.
2. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevators. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so that no evidence remains of correction work. Return items that cannot be refinished in the field to the shop, make required repairs and refinish entire unit, or provide new units as required.
- B. Provide final protection and maintain conditions, in a manner acceptable to elevator manufacturer and installer, that ensure elevators are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 14 24 05

Provide engineering services, material and labor to modernize one Southeastern hydraulic passenger elevator installed in 1977 for University of South Carolina Aiken as detailed in the following pages:

Equipment: (1) Passenger Hydraulic Elevator

Stops: 2
Openings: 1
Capacity: 2050 lbs.
Speed: 100 fpm

Pumping Unit

Replace existing pumping unit with new per specifications. At a minimum match horsepower of existing unit.

Hydro Controller 2010 Code Compliant with New Landing System & Limit Switches

Existing relay control system will be replaced. Reliability and performance to be improved by converting to a new microprocessor control. The new control permits faster addition of new features, now or in the future, and will include on-board LCD screen diagnostics.

Provide all labor, material, engineering and supervision required to perform the following scope of work during regular working hours of the elevator trade:

- Remove existing elevator control components and control cabinet
- Install new microprocessor controller in new cabinet
- Perform all required wiring to interface control with other elevator components
- Replace components so they properly interface with the new controller
- Test and adjust the system for proper operation

Machine Room Wiring

All new wiring duct and conduit between the hoistway and machine room equipment to be furnished and installed according to applicable codes and in a workmanlike fashion.

Top of Car Inspection Station

The existing inspection station to be replaced. A new top of car inspection station to be provided as a control panel on top of the elevator car which, when activated, removes the car from normal service and allows the car to run at inspection speed from the car top station only.

Car Leveling (Banner)

The existing leveling is to be replaced. The new system is to include the necessary hardware to control the leveling of the elevator at each floor. Leveling accuracy to be within code-accepted standards.

Hoistway Leveling

The existing hoistway leveling vanes are to be replaced with new vanes mounted at each floor landing and along with the car leveling sensors provide the necessary feedback to the controller for landing and leveling.

Car Wiring

The existing car wiring is to be replaced with all new car wiring and is to be furnished and installed by applicable codes in a workmanlike fashion.

All wiring is to have flame retarding and moisture resistance outer covering. All new wiring will contain Underwriters Laboratories labels. All wiring will be in strict accordance with good wiring practices and in compliance with the National Electric Code and ANSI A17.1 requirements.

Door Operator

A new single speed center opening door operation is to be provided. This linear, digital solid state operator will interface with the new controller to provide closed lop door operation. Doors will react quickly safety sensors while maintaining door-closing speed and force limits within applicable safety standards. Hoistway windage and other environmental conditions that may affect reliability and passenger safety are compensated for with this operator.

Car Clutch

Provide a mechanical clutch to connect the car hoistway door. The operation of the clutch will provide driving motion of the hoistway doors for full open and full close direction. The drive rollers will remain engaged to prevent separation of the hoistway doors from the car doors.

Electronic Edge

The existing electronic door edge is to be replaced with a new light curtain. The new edge will detect objects in the path of the closing doors at such a distance that reversal of the doors can be provided without necessarily contacting the detector. The device will provide this operation for a minimum of the lower two-thirds of the opening height.

The device will include photoelectric units that provide protection across the entire opening. The operation will be to maintain the doors in a full open direction if the doors are open and the beams obstructed. Should the doors not be obstructed and in the closing motion the reversal will be dependent on the detector assembly to allow continuous closing until minimum distance to object is reached. An automatic adjustable timed cutout will be provided should the beams become obstructed for an extensive period of time.

Cab Doors

The existing doors are to be replaced with new 42" x 84" stainless steel #4 finish, single speed center opening door panels. Verify size of existing doors prior to ordering

The door panels will be formed of not lighter than 16 gauge steel and all joints will be welded.

The bottom of the doors will be provided with removable laminated phenolic guides which run in the sill slots. Doors will be reinforced for separate hangers or built to include integral hangers and will contain suitable material for sound deadening.

Cab Finishes

Replace existing ceiling, lighting, laminate panels and handrails to products as specified

Gibs (car)

The present car door gibs are to be replaced with new gibs which will be mounted to the bottom edge of horizontally sliding door panels.

Interlock Assembly

The existing hoistway door interlocks shall be replaced. An electro-mechanical interlock will be provided for each hoistway entrance. The interlock system will be a tested and approved system to comply with the applicable codes.

The interlocks will prevent operation of the car away from the landing unless the doors are in closed and locked position as defined by applicable codes.

The interlocks will also prevent the opening of a hoistway door from the landing side unless the car is within the landing zone and is either stopped or being stopped at that level. Interlocks will be so located that they are not accessible from the landing side when the hoistway doors are closed.

Hoistway Duct/Conduit

All existing duct and conduit in the hoistway is to be replaced with new duct and conduit of proper size and type for the equipment furnished as needed. Duct and conduit meeting applicable codes, installed in a workmanlike manner is to be used. All wiring will be totally enclosed in conduit or duct.

Travel Cables

The existing traveling cables shall be replaced. All traveling cables will be new and properly suspended between car and hoistway or machine room cable support. All cables will incorporate the specified types of conductors. At a minimum each traveling cable will contain one shielded and jacketed pair. Cables will be supported by steel supporting strands if travel exceeds 150 feet and in a loop compatible to size of cable. The outer covering will be fire resistant and will meet Underwriters Laboratories standard test. The cables will be hung free of all contact from hoistway or car equipment. Cables will contain adequate number of conductors to provide a minimum of 10% of spares.

Hoistway Wiring

The existing hoistway wiring shall be replaced with all new wiring between the hoistway and machine room equipment and installed by applicable codes in a workmanlike fashion.

The hoistway door interlocks' wiring shall be replaced with new SF-2 high heat resistance wiring. All other new wiring will have flame retarding and moisture resistance outer covering. All new wiring will contain Underwriters Laboratories labels. All wiring will be in strict accordance with good wiring practices and in compliance with the National Electric code and ANSI A17.1 requirements.

Pit Switch

The existing pit stop switch is to be replaced.

Car Buffer – Spring

The car spring buffer is to be reused.

Platform

The existing platform is to be reused.

Main Car Operating Panel #4 Stainless Steel – Fixed

The existing main car operating panel is to be replaced. A new main car operating panel is to be provided in front return panel. The panel will contain floor call buttons corresponding the number of floors served plus the standard devices of door open, door close, alarm and emergency stop buttons, independent service key switch, fan and light switches as a minimum.

The standard required cluster of devices will be located at a centerline height of 35" from cab floor to comply with handicap requirements. All standard required devices and floor call buttons will have handicap indications adjacent to them.

Appropriate fire fighter's service key switch, jewel, fire and call cancel button, will be provided in car operating panel. Appropriate key switches for functions of the operating system provided will be included. These switches will be clearly identified as to their function.

In lieu of key switches, the devices may be incorporated in a separate covered portion of the COP.

Cab Fan

Refurbish Guide Shoes

ADA Phone

The phone in the existing main car operating panel is to be replaced with a new ADA compliant hands-free phone.

Emergency Light

A new emergency light is to be provided in the main car operating panel.

Car Position Indicator

The existing position indicator(s) in the car operating panel is to be replaced. An electronic readout type position indicator(s) shall be provided which will give a visual indication of the car position.

As the car travels through the hoistway, the numeral corresponding to the floor at which the car has stopped or is passing will be displayed on the position indicator. Change from one numeral to another will be instantaneous and complete.

The readout size letters will be two inches in height unless herein specified to be of a different size. A blank cover plate is to be provided to cover the previous hole if additional cab work is not included.

Car Lanterns

New car lantern units are to be installed to indicate direction. Arrows will illuminate for the direction the car is traveling. An audible sound will indicate the direction of travel.

Landing Push Button Stations

The existing hall call fixtures are to be replaced with flush mount box and cover fixtures. Terminal floors will have single push buttons and intermediate floors will have one button for up, and one for down. Any key switches necessary for continued proper operation will be provided with the fixtures if the related feature is provided by this project or for currently existing switches that are functional. The finish of the fixtures will be per project specification.

Landing Push Button Stations – Flush

The existing hall call fixtures will be replaced with flush mount box and cover fixtures. Terminal floors will have single pushbuttons and intermediate floors will have one button for up, and one for down. Any key switches necessary for continued proper operation will be provided with the fixtures if the related feature is provided by this project or for currently existing switches that are functional. The finish of the fixtures will be per project specification.

Car Top Inspection Station

Hoistway Access Switch

A new keyed switch is to be installed at the designated landings that will allow an authorized person to move the elevator at a slow speed, while the car and hoistway doors are open. The technician can then stop it so that the top of the car can be accessed from the corridor landing.

Braille on Jambs

Existing Braille plates are to be replaced with new Braille plates on each entrance side jamb in a manner compliant with ADA regulations.

Related Work to include but not limited to:

- Modify pit lighting and electrical service to meet Code.
- Add fire alarm system.
- Add HVAC to maintain room temp between 55-90 degrees.
- Modify equipment room lighting and electrical to meet Code requirements.
- 120 VAC disconnect for cab lighting.
- New finishes per specifications.

All work performed shall conform to current Code requirements and ADA regulations where applicable.

SECTION 26 05 00 — GENERAL PROVISIONS

PART 1 - GENERAL

1.1 RELATED SECTIONS

- A. The provisions of The Supplement to Advertisement, The Instructions to Bidders, Supplement to Instruction to Bidders, General Conditions, Supplementary Conditions and all other sections of Division 1 of these Specifications shall govern the work under this Division or Section the same as if incorporated herein.

1.2 SCOPE

- A. The Contractor shall provide all required material and labor to replace existing feeders for new elevator installation, connect new HVAC, outlets and lights, and provide fire alarm modifications for elevator recall as shown on the plans.

The Contractor shall provide and install complete electrical systems including all conductors, raceways, fittings, protective devices, wiring devices, fixtures, supports, and all miscellaneous hardware necessary. All of the above equipment shall be completely installed and left in proper operating condition. All electrically powered equipment whether furnished by others or by the Contractor shall be wired by the Contractor.

- B. Complete power distribution and utilization system shall be installed, including circuit breakers, utilization devices and equipment as indicated on drawings.
- C. The Contractor shall furnish and install power, wiring and/or disconnects as shown on drawings for wiring systems for mechanical systems specified in Division 15. Temperature control wiring, equipment control and interlock wiring are not included in this division unless specifically noted in these specifications or shown on the plans. All motor disconnects, starters, combination motor controllers and motor control centers shall be furnished under this division of specifications unless noted otherwise.
- D. Remove all related electrical equipment and wiring not being re-used.

1.3 REQUIREMENTS

- A. Field verification of scale on electrical plans is directed since actual locations, distances and levels will be governed by actual field conditions.
- B. In case of conflicts or discrepancies between plans, plans and specifications and/or actual field conditions, Contractor shall notify the Engineer before work is continued. Coordinate with other trades to avoid conflicts.

- C. Permits, and Tests - The Contractor shall procure and pay for all permits, fees, and licenses required. Perform all tests to ensure all systems are in good operating condition.
- D. Review of Material; Specific reference in the specification to any article, device, product, material, fixture, form or type of construction by name, make or catalog number, with or without the words "or equal", shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition.
- E. Bidders shall base bids on the material specified or on equals receiving approval 10 days prior to Bid Opening. Any increase in the cost of work resulting from substitution of any product specified is part of this contract and shall be accomplished in an approved manner at no extra cost to the Owner.
- F. Substitutions. No substitution will be considered unless written request for approval has been received by the Engineer at least 10 days prior to the date of receipt of bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or other Work that incorporation of the substitute would require shall be included; failure to do so does not alleviate the Contractor of his responsibility to make any and all necessary changes required for installation of the approved substitution. The burden of proof of the merit of the proposed substitute is upon the proposer. The Engineer's decision of approval or disapproval of a proposed substitution shall be final.
- G. All materials shall be new and of current manufacturer. Where more than one of a type of device is used, all shall be by the same manufacturer. All materials shall conform to the grade, quality and standards of those specified.
- H. Shop drawings shall be submitted in accordance with the General Conditions. Forward all shop drawings at one time. Each item shall bear project name and identifying symbol from plans. Shop Drawings required are as follows:
 - 1. Lighting Fixtures
 - 2. Wiring Devices
 - 3. Circuit Breakers
 - 4. Disconnect Switches
 - 5. Fire Alarm System Equipment
- I. Interferences - The drawings are generally diagrammatic in nature, and accordingly the Contractor shall coordinate his work with that of all other trades to avoid interferences. The Contractor shall examine the complete set of drawings and specifications for the job before installation of electrical work, coordinating locations and routings with other trades to avoid interferences. Work installed by the Contractor which does interfere with another trade shall be removed and reinstalled at the Contractor's expense when directed by the Architect.
- J. Workmanship shall be of the highest quality and all work shall be done by workmen skilled in the trades involved.

- K. The Contractor shall guarantee all work under this contract for one year and shall be responsible for the maintenance of all electrical equipment furnished and installed under this contract, excluding lamp replacement, for a period of one year from the date of substantial completion.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 APPLICABLE CODES AND STANDARDS

Note: The materials and installation shall conform to the minimum requirements and latest outstanding issues and revisions of the following codes, standards, and regulations wherein they apply:

NFPA No. 70, National Electrical Code, (2008 edition).

IBC (2006), ICC (2006), IFC (2006)

American National Standard, National Electrical Safety Code, (2002).

Applicable Publications of NEMA, ANSI, IEEE and IPCEA.

Underwriter's Laboratories, Inc. Standards

City, State and Local Codes and Regulations having jurisdiction.

OSHA requirements.

ADA requirements.

END OF SECTION 26 05 00

SECTION 26 05 01 — BASIC MATERIALS

PART 1 - GENERAL

1.1 RELATED SECTIONS

- A. Materials specified in this section shall comply with all applicable requirements of SECTION 26 05 00, GENERAL PROVISIONS.

1.2 SCOPE

- A. Contractor Furnished. Unless otherwise noted on the drawings, equipment list, or specifications, the Contractor shall furnish and install all materials, devices, and apparatus necessary for the complete electrical system. All materials and equipment shall be of types and manufacturer specified wherever practical. Should materials or equipment so specified be unobtainable, the Contractor shall submit the description and manufacturer's literature, reason for the substitution request and shall secure the approval of the Engineers before substitution of other material or equipment. This specification establishes performance requirements and the quality of equipment acceptable for use and shall in no way be construed to limit procurement from other manufacturers.
- B. Equal or Equivalent. The term "or equal" and similar terms as used on the drawings or specifications shall be interpreted to mean "equal or equivalent" in the opinion of the Engineers.
- C. Manufacturer's Prints. Where the Contractor furnishes equipment other than standard construction items, he shall furnish manufacturer's prints and reproducibles of all such equipment to the Engineers.
- D. U.L. Listing. All equipment and materials shall be new and conform to the requirements of this specification. All equipment and materials shall be listed by the Underwriter's Laboratories, Inc., and shall bear their label whenever standards have been established and label service is regularly furnished. All equipment and materials shall be of the best grade of their respective kind for the purpose.

PART 2 - PRODUCTS AND EXECUTION

2.1 CIRCUIT BREAKERS

- A. Contractor Furnished. The contractor will provide breakers as shown on the drawings, equipment list, or within the specifications.

- B. As Specified. Breakers shall be of the type, rating, number of poles, size, and interrupting capacity, specified or required for the environment, location, application, and load served.
- C. Molded Case Circuit Breakers. Molded case circuit breakers shall be circuit interrupting devices which will operate both manually for normal switching functions and automatically under overload and short circuit conditions. Circuit breakers shall provide circuit protection when applied within rating.
- D. Operating and Switching Mechanism. The operating mechanism shall be entirely trip-free so that the contacts cannot be held closed against an abnormal over-current or short circuit condition. The switching mechanism shall be quick-make, quick-break type.
- E. Overload and Short Circuit Protection. The operating handle of the circuit breaker shall open and close all poles of a multi-pole breaker simultaneously. The breakers shall meet applicable NEMA and U.L. specifications. Each circuit breaker shall have a trip unit to provide overload and short circuit protection. The trip unit for each pole shall have elements providing inverse time delay under overload conditions and instantaneous magnetic tripping for short circuit protection. The trip element shall operate a common trip bar which shall operate all poles in case of an overload or short circuit through any one pole. Automatic tripping shall be clearly indicated by handle position.
- F. Rating. The molded case circuit breakers shall be rated for fault duty as specified on the plans. Series ratings are not allowed. The Contractor shall verify available fault current with the Utility Company for the actual installation and forward to the Engineer.

2.2 SAFETY SWITCHES

- A. Contractor Furnished. The contractor shall provide all safety disconnect switches required. The switches shall be of the type, voltage, ampere, and horsepower rating, number of poles, fusible or nonfusible, as specified or required for the environment, location, application, and load served.
- B. Description. All safety switches shall be NEMA premium heavy duty, horsepower rated, industrial type, and shall be Underwriters' Laboratories listed. Fusible switches shall be complete with fuses of the type and rating specified (refer to paragraph "Fuses") and as indicated on the drawings or within these specifications. All switches shall have switch blades that are fully visible in the OFF position when the door is open and shall be of dead front construction with arc suppressors. The mechanism shall be quick-make, quick-break type. The door shall be interlocked (defeatable type) with the handle or mechanism to prevent unauthorized opening of the door in ON position. Padlocking provisions shall be provided for padlocking in the OFF position with one or more locks or lockable hasps. Grounded switches in a common enclosure shall be mounted in enclosure types specified elsewhere. Individually mounted switches shall be mounted in enclosures suitable for the location and environment as specified on the drawings.

- C. Nameplate. All switches shall be provided with an engraved laminated phenolic nameplate showing the power source (Unit No. or other), and title of equipment served. Nameplates to be black letters on white background.
- D. Manufacturer and Enclosures. All switches furnished shall have enclosures as specified on the drawings. Acceptable manufacturers shall be Square D, General Electric, Siemens, and Cutler-Hammer.

2.3 FUSES

- A. Contractor Furnished. The contractor shall furnish and install fuses in all fusible devices and equipment that are furnished by the contractor.
- B. Manufacturer and Listing. The following fuse types shall be used for the applications listed. The following are trade names of the Bussman Manufacturing Division, however, equivalent products by Chase Shawmut Division shall be acceptable.

2.4 MISCELLANEOUS CONTROL DEVICES

- A. Furnished by Others. Miscellaneous control devices such as duct switches, air flow switches, thermostats and temperature control devices, and similar equipment shall normally be furnished under another division. Any such device that is to be furnished under this division shall be specifically designated on the drawings.
- B. Enclosures. All devices furnished shall be suitable for the control requirements and shall have voltage rating and adequate capacity for the application. They shall be housed in enclosures suitable for the location and environment as indicated on the drawings.

2.5 RECEPTACLES – OUTLETS

- A. Contractor Furnished. The contractor shall furnish and install all convenience (and power type) receptacles and outlets shown on the drawings. Suitable boxes, covers and matching plugs as specified shall be provided and the installation shall conform to typical details, drawings, and as described elsewhere in this specification. See electrical symbol drawings for additional descriptive data.
- B. Single Manufacturer. Receptacles of similar usage and rating shall be those of a single manufacturer.
- C. Usage and Manufacturer. General use and convenience outlets shall be as specified by symbol on the drawings and as listed on the symbols drawing.
- D. Ground Fault Protection. Note that all convenience receptacles to be installed as ground fault interrupting type are so noted on drawings.

2.6 BOXES

- A. Contractor Furnished. The contractor shall furnish and install all electrical boxes required for the proper installation of the electrical systems. Boxes shall be of the NEMA type suitable for the location. Boxes shall be installed as specified on the drawings and as described under "Wiring Methods", and other applicable sections of this specification for wiring devices such as switches, receptacles, and similar devices. In order to maintain fire ratings, boxes installed "back-to-back" in fire walls shall not be located in the same space between studs, but shall have a stud located between them.
- B. Concealed. Fixture, outlet, and switch boxes installed concealed in walls or ceiling areas shall be galvanized or cadmium plated sheet steel of not less than the minimum size as recommended in the National Electrical Code and shall be furnished with appropriate covers as specified in other applicable sections of these specifications or on the drawings. All boxes shall be accessible for maintenance purposes.
- C. Exact locations of all floor boxes shall be coordinated in the field with the architect unless specific dimensions are shown on the drawings. Also, see Section 16500 of these specifications.
- D. Surface Mounted. Fixture, outlet, and switch boxes installed surface mounted in plant, shop, operating, and unfinished areas shall be threaded, cast alloy iron or malleable iron. Iron type shall have a cadmium/zinc electroplate, or galvanized finish with appropriate lacquer. Boxes shall be of the approved type for the outlets, switches, and fixtures served and shall be made of the material and finish compatible with the conduit system and location. Surface mounted boxes shall be only as noted on the plans.
- E. Splice and Tap Boxes. Splice and tap boxes for power circuits shall be used only where designated on the drawings and shall be of the type and size indicated. Otherwise all power wiring shall be continuous, splice and tap free, between equipment. On lighting and convenience receptacle circuitry, wiring may be spliced and boxes shall be provided for concealed or surface mounting as previously specified or may be JIC oil-tight of size and type indicated on the drawings or minimum size as specified in the National Electrical Code.
- F. Pull Boxes. Pull boxes for interior, or outdoor exposed power wiring shall be provided where shown or required to facilitate the installation of the wiring. Pull boxes shall not be located in finished rooms and shall be accessible for maintenance use. For conduit sizes 3/4 and 1 inch, conduit fittings of the "C", "LB", "TB" and similar types may be used for "Pulling In." Unless designated otherwise, all pull boxes shall be the straight-through type and changes in direction shall not be made in the box. The boxes shall be of the minimum size and type as required by the National Electric Code or as sized on the drawings.
- G. Exterior and Underground. For exterior exposed work, pull boxes shall be of NEMA 3R construction and shall be threaded hub type with gasketed cover.

2.7 COVERS AND DEVICE PLATES

- A. Contractor Furnished. The contractor shall furnish and install the appropriate cover on all boxes, conduit fittings, panels, cabinets, switches, receptacles, and similar wiring devices and other equipment that is Contractor furnished. Conduit outlet fitting covers shall be the type specified under "Conduit Fittings."

2.8 ENCLOSURES

- A. Enclosures and housings for all Contractor furnished electrical equipment and devices shall be suitable for the location and environmental conditions and shall be of NEMA type as shown on symbol sheet drawing.

END OF SECTION 26 05 01

SECTION 26 05 19 — CONDUCTORS

PART 1 - GENERAL

1.1 RELATED SECTIONS

- A. Materials specified in this Section shall comply with all applicable requirements of SECTION 26 05 00, GENERAL PROVISIONS.

1.2 SCOPE

- A. This specification covers the requirements for all wire and cable to be used in the installation of the electrical systems for the project, including all power, lighting, control and instrumentation systems.
- B. Wire and cable will normally be furnished by the Contractor for installation. Drawings will indicate where cable is not to be furnished.
- C. All cable is to be "Contractor-furnished", the Contractor shall submit for approval by the Owner any deviations anticipated or proposed with respect to the cable manufacturer, cable type, or specification contained herein.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. All wire and cable shall be Underwriters' Laboratories (UL) listed. In addition to other standard labeling, all wire and cable shall be marked UL on the outer surface indicating Underwriters' Laboratories, Inc. certification.
- B. Grounding conductors, where insulated, shall be colored solid green. Conductors intended as a neutral shall be colored solid white.
- C. For all circuits 600 volt and less, wires and cables shall have code grade, 600 volt type THWN-THHN, 75 degrees C., wet or dry locations, moisture and heat resistant thermoplastic insulation. Insulation thickness shall be per National Electrical Code, Table 310-13.
- D. Conductor sizes are expressed in American Wire Gage (AWG) or in circular mils. Conductors shall be annealed copper wire, minimum size #12 AWG, except that #14 AWG may be used for control. All conductors shall be stranded except that solid conductors may be used for #12 AWG lighting and receptacle branch circuits.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Separation of Usage. Lighting and power wiring shall be routed in conduits, or other raceways as shown on the drawings. Lighting and power wiring shall not be routed in a common raceway except where shown on drawings. Push-button wiring shall be routed in separate raceways even though related to a particular motor circuit.
- B. Pulling. Where mechanical assistance is used for pulling conductors, patented wire pulling compounds having inert qualities that do not harm the wire insulation or covering shall be applied to the conductors as they are pulled into raceways. Interior of all raceways shall be free from grease, filings or foreign matter before conductors are pulled in.

3.2 IDENTIFICATION

- A. Wire, Cable, Raceways, and Conduits.
- B. Circuit identification numbers shall be placed on each end of the conductor involved by using self-laminating marker tags, T&B Company E-Z Code Type WSL or equal. Circuit numbers shall be as shown on the plan and panel schedule drawings.
- C. Phase Identification. Phase sequence throughout the installation shall be standardized wherever practical in all electrical power equipment as follows:

	<u>Phase A</u>	<u>Phase B</u>	<u>Phase C</u>
Position Occupied	Front	Center	Rear
	Top	Center	Bottom
	Left	Center	Right
Color Code: 208/120V, 3-phase	Black	Red	Blue
480/277V, 3-phase	Brown	Orange	Yellow

3.3 SPLICES AND TERMINATIONS

- A. Lighting Conductors. Splices in lighting conductors shall be made with splicing caps with metal inserts only, such as 3M Company's "Scotchlock" spring connectors. The splices shall be firmly and neatly taped to prevent entry of moisture.
- B. Power Conductors shall be continuous from outlet to outlet. No power cable shall be spliced except on explicit instructions of the Owner's Representative.

3.4 LUGS

- A. All lugs shall be furnished and installed by the Contractor where required.
- B. Lugs for copper power wiring, Sizes No. 12 and No. 10 AWG, shall be T&B "Sta-Kon" uninsulated ring type lugs. Lugs for copper power wiring from No. 10 AWG to size 1/0 AWG shall be T&B 1-hole Type 54100 Series. Size 2/0 AWG and larger lugs shall be 2-hole type 54200 series (except where 1-hole is required to match motor lead lugs). Sizes above 1/0 are to be applied using hydraulic pump tool.
- C. Where motor leads are furnished without lugs, T&B 54500 Series 2-way connectors (splicing sleeves) shall be used. Splice sleeves may be desirable where limited space for termination exists.
- D. The proper lugs will normally be furnished with equipment in all Owner-furnished equipment. All other lugs shall be furnished and installed by the Contractor. No mechanical type lugs shall be used except in panelboards. If any mechanical type lugs are furnished with Owner-furnished equipment, the Contractor shall replace them with proper compression type lugs where practical.

3.5 TAPING

- A. All voids, sharp corners and bolt projections shall be made smooth by filling with Okonite or Scotch Fill before applying the laps of tape required for insulation. All loose strands of wire shall be removed before taping. Duxseal will not be permitted.
- B. Joints and other sections of wiring requiring tape shall be half lap and at least two layers. Taping shall be neatly done and shall form a permanent insulation equal in mechanical and electrical strength to the insulation of the conductor. Taping shall be as follows:
 - 1. 600 Volt insulation - A minimum of 1-1/2 lap layer varnished cambric and 2-1/2 lap layers of 3M No. 33 vinyl plastic electrical tape.
- C. All taping, splicing and termination materials shall be furnished by the Contractor.

END OF SECTION 26 05 19

SECTION 26 05 26 — GROUNDING

PART 1 - GENERAL

1.1 RELATED SECTIONS

- A. Materials specified in this Section shall comply with all applicable requirements of SECTION 26 05 00, GENERAL PROVISIONS.

1.2 WORK INCLUDES

- A. As Required By the NEC. In general, fixtures, outlets, the enclosing cases, mounting frames, etc., of all switches, circuit breakers, control panels, motors and any other electrically operated or electrical equipment, conduit, trays, and other raceways shall be effectively and permanently grounded with a separate copper grounding conductor of cross-section as required by the National Electrical Code and drawings. It shall be of capacity sufficient to insure continuity and continued effectiveness of the ground connections to carry fault currents. Ground conductors must be as short and straight as possible, protected from mechanical injury and if practicable without splice or joint. The grounding conductor shall be run from a ground established at the source of supply to the equipment to be grounded. Ground wires from below grade shall be protected by galvanized conduit and the conductor shall be brazed to conduit sleeve on each end. All grounding conductors shall be copper.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Power Conductors Supplying Equipment. A copper grounding conductor must be run inside the conduit or raceway, enclosing the power conductors supplying the equipment, or in case of a multi-conductor power cable, must be located within the sheath.
- B. Connect at Source. Ground conductors in power cable or ground wire in conduits shall always be connected directly to station ground at the source end, and to motor frame or equipment enclosure and/or equipment ground bar.

- C. System Neutral. The equipment grounding conductor in all circuits shall be connected to the frame and ground lug in the panelboards and not the neutral bus. Equipment ground connections to a system neutral are not permitted.
- D. Fuses. In all cases of grounded circuits, fuses must be omitted from the grounded neutral conductor throughout the entire installation.
- E. Equipment Frames. Frames of all electrical apparatus will be connected to the grounding system. Neutrals of service transformers shall be connected to the grounding system.
- F. Metallic Raceways. All metallic conduits and wiring channels must be connected at each end to the grounding conductor with a good electrical contact.
- G. Identification. The grounding conductor shall be stranded and covered with a green jacket.
- H. In all cases the white wire should be used for the current-carrying neutral only and never as a grounding conductor, or other purpose.

END OF SECTION 26 05 26

SECTION 26 05 39 — ELECTRICAL RACEWAYS

PART 1 - GENERAL

1.1 RELATED SECTIONS

- A. Materials specified in this Section shall comply with all applicable requirements of SECTION 26 05 00, GENERAL PROVISIONS.

1.2 SCOPE

- A. Contractor Furnished. The contractor shall provide all conduit, fittings, and supports required and not otherwise shown on plans as furnished by others.
- B. The types of electrical raceways required for the project include the following:
 - 1. Electrical Metallic Tubing
 - 2. Intermediate Metal Conduit
 - 3. Flexible Metal Conduit
 - 4. Liquid-Tight Flexible Metal Conduit
 - 5. Rigid Galvanized Conduit
 - 6. PVC Rigid Conduit
- C. The minimum raceway size shall be 3/4".
- D. Product Delivery, Storage, and Handling. Contractor is to provide color-coded end-cap thread protectors and handle conduit and tubing carefully to prevent damage. Store pipe and tubing inside whenever possible. When necessary to store outdoors, elevate well above grade and enclose with durable, watertight wrapping.

PART 2 - PRODUCTS

2.1 MATERIALS AND COMPONENTS

- A. Electrical Metallic Tubing. Galvanized, thin wall tubing, fittings shall be hex-nut, expansion gland type, zinc plated, and U.L. listed as "raintight." No crimp, spring, or set-screw type fittings will be accepted.
- B. Intermediate Metal Conduit. Galvanized steel tubing, with zinc coated interior.
- C. Flexible Metal Conduit. Galvanized single steel strip, flexible, interlocked.
- D. Liquid-Tight Flexible Metal Conduit. Galvanized single steel strip, flexible, interlocked, double wrapped, with liquid-tight PVC jacket.

- E. Rigid Galvanized Conduit. Rigid steel, hot-dipped galvanized conduit.
- F. PVC Rigid Conduit: U.L. listed Schedule 40 heavy wall rigid conduit.
- G. Conduit, tubing and duct accessories including straps, hangers, expansion and deflection fittings as recommended by conduit, tubing, and duct manufacturers.

PART 3 - EXECUTION

- A. Electrical Metallic Tubing. Branch circuits run in hollow dry walls and above ceilings. Not to be exposed.
- B. Flexible Metal Conduit. Connection of motors and for other electrical equipment where subject to movement and vibration and located in a dry, interior location. Flexible conduit is not to exceed 60" in length for any one application.
- C. Liquid-tight Flexible Metal Conduit. Connection of motors and for other electrical equipment where subject to movement and vibration, and also subjected to one or more of the following conditions: Exterior location; moist or humid atmosphere where condensate can be expected to accumulate; corrosive atmosphere; subjected to water spray; subjected to dripping oil, grease or water. Flexible conduit is not to exceed 60" in length for any one application.
- D. Intermediate Metal Conduit. All conduits of 2" nominal trade size or more and/or where exposed. Not to be stubbed up at floor level.
- E. Rigid Galvanized. Where specified on plans for certain underground or exposed runs, or where stubbed up at floor level.
- F. Rigid PVC. Where specified on plans for certain underground runs, UL approved Schedule 40 heavy wall rigid PVC conduit shall be used. Not to be stubbed up at floor level. All PVC underground runs shall transition to rigid galvanized before stubbing up through floor slab or grade.

3.2 INSTALLATION

- A. Install conduit and tubing in accordance with NEC and National Electrical Contractors Association's "Standard of Installation", and with recognized industry practices. Where NECA and NEC standards differ, use the more stringent requirement.
- B. Complete the installation of raceways before starting installation of wires.
- C. Wherever possible, install horizontal raceway runs above water and steam piping.
- D. Care shall be taken to keep the interior of conduits clean, and each conduit run shall be thoroughly cleaned and dried before any cable is pulled through.

- E. Unless indicated otherwise on drawings, all exposed conduits shall be run parallel with or perpendicular to building structural members.
- F. Conduits entering sheet metal enclosures shall be made up with double locknut and insulating bushing. Locknut shall be of the type which will bite into the metal of the box.
- G. Conduits entering threaded openings in equipment enclosures, boxes, etc., shall have at least five full threads engaged. In outdoor and underground locations, threaded joints shall be made up with a thin application of conducting joint compound. The inside of the fitting shall be thoroughly cleaned of any excess compound.
- H. Power operated bending machines shall be used on conduits 1-1/4" and larger. Heating with torches will not be permitted.
- I. All conduit runs shall be continuous from outlet to outlet with all joints and connections pulled tight to insure an electrically continuous and mechanically secure raceway system.
- J. All raceways in "finished areas" such as offices, corridors, etc., shall be concealed.

3.3 CONDUIT AND TRAY OPENINGS

- A. Contractor's Responsibility. The Contractor shall be responsible for all sleeves and openings through walls and floors necessary for passage of electrical conduits and raceways. Where contractor must provide openings and/or drill concrete floors and/or walls, he shall be responsible for the repair of these openings. Structural members and reinforcing shall not be cut, burned or damaged in any way. All openings in walls and floors, and under switchgear and panels where electrical cables and conduits are installed, shall be closed up by the Contractor to prevent dust, dirt and water from entering.
- B. Sealing. The Contractor shall be responsible for sealing all wall and floor openings and all floor and wall sleeve openings utilized by the contractor whether furnished by Others or by the Contractor.
- C. Sleeves and openings shall be sealed with materials that will withstand fire and heat to the same rating as the wall, floor, or ceiling through which the conduit or tray passes and shall not be less than a 30-minute barrier.

END OF SECTION 26 05 39

SECTION 26 51 00— LIGHTING

PART 1 - GENERAL

1.1 RELATED SECTIONS

- A. Materials specified in this Section shall comply with all applicable requirements of SECTION 26 05 00, GENERAL PROVISIONS.

1.2 WORK INCLUDED

- A. Contractor Furnished. The Contractor shall furnish, install and wire all lighting fixtures and the complete lighting system as shown on the drawings. The contractor shall furnish all appropriate mounting hardware as required for installation of the fixtures in the various ceiling types. The contractor shall coordinate the various ceiling types with the architect's reflected ceiling plan and construction details. All fixtures shall be the type and manufacturer specified, with UL label. Recessed incandescent downlights shall have thermal protection.
- B. Typical Details, Drawings and Symbols. The Contractor shall install lighting fixtures complete with lamps and as shown on drawings. Refer to symbol drawings for additional descriptive and installation data. The Contractor shall check the location of all fixtures in relation to the structure and the work of other crafts and shall obtain approval of the Owner's representative to relocate fixtures, if required, to avoid interferences.

PART 2 - PRODUCTS

2.1 WIRING DEVICES

- A. Wiring Devices. All wall switches for lighting shall be those of a single manufacturer and shall be as specified by the symbol on the drawings and as listed on the symbols drawings.

2.2 LIGHTING FIXTURES

- A. All lighting fixtures shall be as specified on the fixture schedule on the drawings.
- B. Fluorescent fixtures shall be furnished with electronic start, high power factor, integral ballasts and T-8 lamps. All recessed troffers designated as "Spec Grade" shall have a minimum depth of 4-1/2".

- C. Recessed incandescent fixtures shall have thermal protection, galvanized steel junction box and medium bases porcelain socket. Specification grade fixtures shall also have extruded aluminum heat sink and Alzak reflector.
- D. All incandescent fixtures shall have medium base porcelain socket and shall be furnished complete with 130V rated lamps.
- E. All outdoor fixtures shall be UL listed for wet locations unless mounted recessed in building overhangs, in such cases fixtures which are UL listed for damp locations may be permitted if specifically noted on the drawings.
- F. Substitutions: Substitution requests shall follow Division 1 Specifications for same.

PART 3 - EXECUTION

3.1 FIXTURE OUTLETS

- A. Fixture outlets shall be installed in the locations shown on the drawings. The Contractor shall study the general building plans in relation to the spaces surrounding each outlet in order that his work may fit the other work required, as well as the work of other trades. When necessary, the Contractor shall relocate outlets so that when fixtures or other fittings are installed, they will be symmetrically located according to room layout and will not interfere with other work or equipment.

3.2 LIGHTING SWITCHES

- A. Lighting Switches. The Contractor shall furnish and install all lighting switches shown on the drawings. The switches shall be installed in the ungrounded lines and shall be mounted in the appropriate boxes for flush or surface mounting as specified under "Boxes". The appropriate coverplates as specified under "covers" shall be installed. Switch mounting shall be as described on the symbol drawings and as described elsewhere in this specification.
- B. Neutral Conductor. The neutral conductor of lighting systems shall be of the same size as the phase conductors. On three and four wire systems the load shall be divided as evenly as possible on each "outside" or phase conductor. Neutral conductors shall be identified throughout by using a white or gray (as specified in "Color Code" section) insulated wire. A green ground wire shall be run in raceway to ground all lighting fixtures, receptacles, boxes and wiring devices.

3.3 FINAL INSPECTIONS

- A. At the conclusion of the job, the Contractor shall see to it that all fixtures are cleaned, lamped and in good operating condition. Upon final inspection all covers shall be installed.

END OF SECTION 26 51 00

SECTION 26 51 07 — ELEVATORS INSTALLATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Materials specified in this Section shall comply with all applicable requirements of SECTION 26 05 00, GENERAL PROVISIONS.

1.2 WORK INCLUDES

- A. The Contractor shall provide electrical connections required for the operation of the passenger elevator. The Contractor shall provide all disconnects, fuses, wire and conduit including but not limited to each controller feeder, lights and signal power disconnect, telephone service from each controller to the telephone board. Contractor shall provide required wiring from lobby shaft and machine room detectors to the elevator controller for Fireman's Recall. The system shall comply with NEC, NFPA and ANSI A17.1.

PART 2 - PRODUCTS

2.1 PRODUCTS

- A. Components of wiring system shall comply with other sections of Division 16.
- B. Controllers shall be furnished and installed under other divisions of these specifications.
- C. The Contractor shall furnish and install all disconnect switches and fuses required for operation of the elevators.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Contractor shall confirm all equipment locations in field with Installer prior to mounting of any equipment. All locations indicated are approximate.
- B. Contractor shall confirm all equipment fuses and feeder ratings. Disconnect and feeder sizes are based on design criteria for bidding purposes. Exact fuse and feeder requirements shall be determined by the Contractor and provided per actual equipment furnished.

- C. Contractor shall provide wiring systems and connections from source to disconnect and on to controller. Provide 3/4"C with pull string with telephone service from each controller to telephone board.
- D. Provide elevator installer with temporary power, if necessary, sufficient to testing of elevator prior to permanent power installation.
- E. Coordinate with elevator installer for required testing.

END OF SECTION 26 51 07

SECTION 28 31 11 - FIRE ALARM SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes fire alarm system modifications to existing fire alarm panels in each of the 3 buildings.
- B. Definitions:
 - 1. FACP: Fire alarm control panel.
 - 2. LED: Light-emitting diode.
 - 3. Definitions in NFPA 72 apply to fire alarm terms used in this Section.
- C. System Description:
 - 1. All fire alarm systems are existing. Each of the three buildings shall have the following modifications:

Provide smoke detectors in lobbies, pit, machine room and top of shaft to interface with elevator controller for Fireman's Recall. Provide alarm signal to FACP when any detector goes into alarm.
- D. Performance Requirements:
 - 1. Comply with NFPA 72.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Provide the following, tailored for this project:
 - 1. System Operation Description: Detailed description for this Project, including method of operation and supervision of each type of circuit and sequence of operations for manually and automatically initiated system inputs and outputs. Manufacturer's standard descriptions for generic systems are not acceptable.
 - 2. Device Address List: Coordinate with final system programming.
 - 3. System riser diagram with device addresses, conduit sizes, and cable and wire types and sizes.
 - 4. Wiring Diagrams: Power, signal, and control wiring. Include diagrams for equipment and for system with all terminals and interconnections identified. Show wiring color code.

- C. Field quality-control test reports.
- D. Operation and maintenance data.
- E. Submittals to Authorities Having Jurisdiction: In addition to distribution requirements for submittals specified in Division 1 Section "Submittals," make an identical submittal to authorities having jurisdiction. To facilitate review, include copies of annotated Contract Drawings as needed to depict component locations. Resubmit if required to make clarifications or revisions to obtain approval. On receipt of comments from authorities having jurisdiction, submit them to Architect for review.
- F. Documentation:
 - 1. Approval and Acceptance: Provide the "Record of Completion" form according to NFPA 72 to Owner, Architect, and authorities having jurisdiction.
 - 2. Record of Completion Documents: Provide the "Permanent Records" according to NFPA 72 to Owner. Format of the written sequence of operation shall be the optional input/output matrix.
 - a. Hard copies on paper to Owner.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Personnel shall be trained and certified by manufacturer for installation of units required for this Project.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. FACP and Equipment:
 - a. NOTIFIER; a GE-Honeywell Company.
 - b. Edwards Systems Technology Inc.
 - c. Simplex.
 - 2. Wire and Cable:

- a. Comtran Corporation.
 - b. Helix/HiTemp Cables, Inc.; a Draka USA Company.
 - c. Rockbestos-Suprenant Cable Corporation; a Marmon Group Company.
 - d. West Penn Wire/CDT; a division of Cable Design Technologies.
3. Audible and Visual Signals:
- a. Gentex Corporation.
 - b. System Sensor; a GE-Honeywell Company.
 - c. Wheelock, Inc.

2.2 SYSTEM SMOKE DETECTORS

A. General Description:

1. UL 268 listed, operating at 24-V dc, nominal.
2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to the FACP.
3. Multipurpose type, containing the following:
 - a. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to the FACP.
 - b. Heat sensor, combination rate-of-rise and fixed temperature.
4. Plug-in Arrangement: Detector and associated electronic components shall be mounted in a plug-in module that connects to a fixed base. Provide terminals in the fixed base for connection of building wiring.
5. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
6. Integral Visual-Indicating Light: LED type. Indicating detector has operated and power-on status.

2.3 ADDRESSABLE INTERFACE DEVICE

- A. Description: Microelectronic monitor module listed for use in providing a system address for listed alarm-initiating devices for wired applications with normally open contacts.
- B. Integral Relay: Capable of providing a direct signal to the elevator controller to initiate elevator recall and/or a circuit-breaker shunt trip for power shutdown.

2.4 WIRE AND CABLE

- A. Wire and cable for fire alarm systems shall be UL listed and labeled as complying with NFPA 70, Article 760.

- B. Signaling Line Circuits: Twisted, shielded pair, size as recommended by system manufacturer, but not less than No. 18 AWG .
 - 1. Circuit Integrity Cable: Twisted shielded pair, NFPA 70 Article 760, Classification CI, for power-limited fire alarm signal service. UL listed as Type FPL, and complying with requirements in UL 1424 and in UL 2196 for a 2-hour rating.
- C. Non-Power-Limited Circuits: Solid-copper conductors with 600-V rated, 75 deg C, color-coded insulation.
 - 1. Low-Voltage Circuits: No. 14 AWG, minimum.
 - 2. Line-Voltage Circuits: No. 12 AWG, minimum.

PART 3 - EXECUTION

- 3.1 Coordinate with maintenance organization for all systems and provide and install all materials and labor required for a complete and operations system. Coordinate with elevator installer for location of shaft detectors and controller connections

3.2 EQUIPMENT INSTALLATION

- A. Device Location-Indicating Lights: Locate in public space near the device they monitor.

3.3 WIRING INSTALLATION

- A. Install wiring according to the following:
 - 1. NECA 1.
 - 2. TIA/EIA 568-A.
- B. Wiring Method: Install wiring in metal raceway according to Division 16 Section "Electrical Raceways."
 - 1. Fire alarm circuits and equipment control wiring associated with the fire alarm system shall be installed in a dedicated raceway system. This system shall not be used for any other wire or cable.
- C. Wiring within Enclosures: Separate power-limited and non-power-limited conductors as recommended by manufacturer. Install conductors parallel with or at right angles to sides and back of the enclosure. Bundle, lace, and train conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with the fire alarm system to terminal blocks. Mark each terminal according to the system's wiring diagrams. Make all connections with

approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.

- D. Cable Taps: Use numbered terminal strips in junction, pull, and outlet boxes, cabinets, or equipment enclosures where circuit connections are made.
- E. Color-Coding: Color-code fire alarm conductors differently from the normal building power wiring. Use one color-code for alarm circuit wiring and a different color-code for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visible alarm-indicating devices. Paint fire alarm system junction boxes and covers red.
- F. Risers: Install at least two vertical cable risers to serve the fire alarm system. Separate risers in close proximity to each other with a minimum 1-hour-rated wall, so the loss of one riser does not prevent the receipt or transmission of signals from other floors or zones.

3.4 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals according to Division 16 Section "Basic Materials."
- B. Install instructions frame in a location visible from the FACP.

3.5 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
 - 1. Before requesting final approval of the installation for the modifications made, submit a written statement using the form for Record of Completion shown in NFPA 72.
 - 2. Perform each electrical test and visual and mechanical inspection listed in NFPA 72. Certify compliance with test parameters.
 - 3. Visual Inspection: Conduct a visual inspection before any testing. Use as-built drawings and system documentation for the inspection. Identify improperly located, damaged, or nonfunctional equipment, and correct before beginning tests.
 - 4. Testing: Follow procedure and record results complying with requirements in NFPA 72.
 - a. Detectors that are outside their marked sensitivity range shall be replaced.
 - 5. Test and Inspection Records: Prepare according to NFPA 72, including demonstration of sequences of operation by using the matrix-style form in Appendix A in NFPA 72.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain the fire alarm system, appliances, and devices.

3.7 TESTING

- A. Provide functional test of all devices including smoke test for detectors, elevator recall and fire alarm reporting for Owner's Representative and Architect prior to testing/inspection by State Engineer and Local Fire Marshal.
- B. Provide final test for OSE and Local Fire Marshal.

END OF SECTION 283111